Linking Land and Sea:
A Northern California Coastal Conservation Needs Assessment

for

Mendocino, Humboldt and Del Norte Counties

July 31, 2006

Linking Land & Sea

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A Northern California Coastal Conservation Needs Assessment

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Background

During the period from November 2005 to July 2006 the California State Coastal Conservancy (Conservancy or SCC), through a one-year contract by the National Oceanic and Atmospheric Administration Coastal Services Center (NOAA CSC), contracted with the Redwood Community Action Agency (RCAA) and the Pacific Marine Conservation Council (PMCC) to conduct a Northern California Coastal Conservation Needs Assessment ("Linking Land and Sea")

The primary purpose of Linking Land and Sea was to assess and document the need for regional strategic coastal (marine and terrestrial) conservation planning and describe the specific needs of conservation organizations to facilitate both planning and implementation of coastal conservation in Mendocino, Humboldt, and Del Norte Counties. Linking Land and Sea sought to identify and assess knowledge, data, and resource gaps that need to be filled in order to more effectively plan for and implement coastal conservation projects.

Methodology

Information for this project was gathered through interviews with and surveys completed by coastal conservation experts and a diversity of regional stakeholders, and a review of existing conservation plans, strategies, and studies.

A Planning Team was developed to oversee and provide input to Linking Land and Sea on a regular basis. This oversight included a review of and input to the project methodology, outreach materials, meeting agendas and minutes, interview questions, and drafts of the Needs Assessment Report.

Stakeholder input was largely obtained at three facilitated meetings (one in each county). Data were gathered at the meetings through a Needs Assessment Survey and Regional Planning Questionnaire. Additional information on marine planning efforts was gathered through individual interviews of marine professionals.

RCAA and PMCC reviewed and summarized the information gathered from participating stakeholders as well as existing marine and terrestrial plans/assessments as a basis for identifying regional needs and gaps, and developing the coastal conservation recommendations reflected in this document.

Results/Priority Needs

Priority Needs identified by stakeholders who participated in the project fell into the following categories: Implementation of existing plans, Building and maintaining conservation organization capacity on the north coast, Development and access to current data, Communication, collaboration, and incentives, and Creating broad support for north coast conservation. The specific needs identified within each of these categories are listed below. The following section provides a list of the recommendations identified as actions necessary to meet these needs.

- Implementation of priority conservation actions as identified in existing terrestrial and marine plans.
- Strategies and/or funds to cover the up front costs of developing conservation projects
- Development of diversified funding sources that are long-term and sustainable
- Filling of priority data gaps with accurate and up-to-date information. Especially for the marine environment; sediment and its impacts to near shore environment; marine fisheries habitats; and estuarine habitat functions for anadromous and marine fisheries.

- Development of site specific terrestrial and estuarine plans.
- Implementation of marine conservation planning on a regional scale.
- Knowledge of and access to existing data and information especially regarding marine resources and the link between land and sea
- Improved access to and understanding of existing terrestrial and marine conservation plans.
- Improved communication and collaboration between conservation partners
- Increased number and utilization of incentives and decrease in the number of disincentives for resources users and managers to conduct coastal conservation and use Best Management Practices
- Development of a sense of stewardship in general population and decision makers for coastal resources

Recommendations

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.
4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.
5. Establish a regional funding mechanism for coastal conservation. Creation of an open-space district or other special district mechanism for the North Coast should be explored.
6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Mapping of marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.
9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy's Northern California Marine Ecoregional Assessment.
10. Develop site specific terrestrial and estuarine plans. See Table 4.1.1 for detailed site information.
11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay Harbor Recreation and Conservation District (HBHRCD), University of California Cooperative Extension Sea Grant (UCCE Sea Grant), NOAA Fisheries, California Department of Fish and Game (DFG) both marine and inland fisheries, The Nature Conservancy (TNC), Center for Integrative Coastal Observation Research and Education (CICORE), Legacy the Landscape Connection, county planning departments, Klamath Resource Information System (KRIS), CalFish data base, Central and Northern California Ocean Observation System (CENCOOS).

13. Provide for outreach and education regarding existing regional coastal conservation plans and priorities for implementation.
14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.
15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.
16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.
17. Create incentives for the use of best management practices by marine and terrestrial resources users.
18. Develop strategies for working with private landowners. Development of a regional strategy that provides an analysis of how conservation of coastal resources on private lands can be economically viable/desirable.
19. Support for and development of programs that connect people to place.

1. INTRODUCTION

In 2005, The California State Coastal Conservancy (Conservancy or SCC) was awarded a one-year contract by the National Oceanic and Atmospheric Administration Coastal Services Center (NOAACSC) to conduct a **Northern California Coastal Conservation Needs Assessment**. The Conservancy retained the Redwood Community Action Agency (RCAA) and the Pacific Marine Conservation Council (PMCC) to conduct the Needs Assessment in consultation with Conservancy and NOAA CSC staff.

A key aspect of the project was including both marine and terrestrial conservation and considering the land to sea continuum. As such the project was named *Linking Land and Sea: A Northern California Coastal Conservation Needs Assessment.* **The primary purpose of Linking Land and Sea was to assess and document: 1) the need for regional strategic coastal (marine and terrestrial) conservation planning and 2) specific needs of conservation organizations to facilitate both planning and implementation of coastal conservation in Mendocino, Humboldt, and Del Norte Counties**. Linking Land and Sea sought to identify and assess knowledge, data, and resource gaps that need to be filled in order to more effectively plan for and implement coastal conservation.

Linking Land and Sea provided an opportunity for the northern California coastal conservation community (agencies, NGOs, businesses, land managers, researchers, educators) to collectively document and communicate needs to regional, state, and federal organizations who may be able to fill the priority needs identified. In addition, the results of the project may be utilized to identify potentials for increased collaboration between coastal conservation organizations. The audience for the Linking Land and Sea report includes any person, organization, or agency with a vested interest in the success of coastal conservation on the North Coast.

The **geographic scope** of the project was coastal Mendocino, Humboldt, and Del Norte counties including California State Waters out to three nautical miles from the shoreline. The terrestrial boundary was not fixed but was generally considered to be the coastal zone as well as encompassing coastal watersheds. The project area boundaries were selected based on resource and socio-political considerations including: The three counties share a tradition of rural, resource-based economies; are much less influenced by San Francisco Bay and are much less densely populated than the other North Coast counties of Marin and Sonoma; and have similar habitat and ecotypes (e.g., large tracts of coniferous forests). Consequently, these three counties have similar coastal issues (sediment impaired watersheds, low population density, conversion from resource-based economies, increasing growth pressures) and conservation opportunities (large areas of open space on the coast, active conservation groups). Compared to the southern and central California coast, the region has not been well studied (especially the marine environment); and due to the small population the North Coast has difficulty competing for state resources.

Identifying how to better support existing conservation organizations is a vital step in ensuring the protection and restoration of this unique coastal region. The Mendocino, Humboldt and Del Norte County coastal region is globally outstanding in its diversity of species, rare habitats, and ecological condition. The region includes a World Heritage Site and International Biosphere Reserve (Redwood National and State Park). The California North Coast eco-region represents the southern extension of the temperate rain forests of the Pacific Northwest, and includes many of California's most significant rivers (Smith, Klamath, Mad, Eel, Mattole, Navarro, Big and Noyo), that are home to California's most significant remaining populations of wild salmon. The regions coastal and marine habitats include tidepools, estuaries, bays, rocky headlands, sandy beaches, mudflats, eelgrass, surfgrass, high and low-relief rocky features, and kelp forests. The region supports a diversity of marine species with important commercial value including Dungeness crab, rockfish, lingcod, perch, sole, anchovies, herring, salmon and albacore.

Species of concern that inhabit this region include:

- Birds such as the northern spotted owl, marbled murrelet, Double-crested, Brandt's, and pelagic cormorants, tufted puffins, rhinoceros auklets, peregrine falcon, and western snowy plover.
- Amphibians including northern red-legged, tailed and foothill yellow-legged frogs, and Del Norte and southern torrent salamanders.
- Coho and Chinook salmon, steelhead and cutthroat trout, California halibut, tidewater goby, green sturgeon, pacific lamprey, large variety of rockfish.
- Northern elephant seal, Steller sea lion, California fur seal, Pacific harbor seal, California Grey, and Blue, Fin, Sperm, and Humpback Whales.
- Rare plants including Mcdonald's watercress, western bog violet, cobra lily, Mt. Eddy draba, Menzie's wallflower, Humboldt Bay owls clover, western lily, pink sand verbena, coastal *Trinquetrella,* and Wolf's evening primrose.

The Needs Assessment was designed to be **comprehensive in scope and include an analysis of coastal conservation needs of a diversity of organizations** including those focused on natural resources and biodiversity; recreation and public access; working landscapes; sport and commercial fisheries; and/or environmental education. The Needs Assessment gathered information from coastal conservation experts, stakeholder input, and from existing marine and terrestrial plans. This document reports the results of these investigations and integrates them to:

1. Identify priority needs and constraints of coastal conservation entities in seven categories including: organizational/business, data/information, socio-political, education, technology and training, regulatory, and other.
2. Determine if there is a need to develop a regional coastal conservation plan;
3. Provide recommendations regarding ways to fill priority needs for successfully implementing coastal conservation planning and/or projects.

The project sought to answer the central question, "What do the people and organizations that are involved in marine or terrestrial coastal conservation projects need to be able to continue to carry out their missions and implement their programs and projects?"

2. PROJECT METHODOLOGY

The approach to providing the final recommendations in this document was to gather information from coastal conservation experts, a diversity of regional stakeholders, and review of existing conservation plans, strategies, and studies. Project duration was November 2005 through July 2006.

2.1 Expert Input

Planning Team. The Planning Team (Table 1) oversaw and provided input to Linking Land and Sea on a regular basis, including: review of and input to methodology, outreach materials, meeting agendas and minutes, interview questions, and draft reports. Planning Team members were involved in regular conference calls, attended the kick-off meeting on January 18, 2006, and participated in the regional stakeholder meetings. The planning team also met in April 2006 at the NOAACSC Headquarters in Charleston, S.C. to review preliminary assessment results and develop the final report outline.

Key Components of the Approach

- Expert Input and Review
  - Planning Team
  - Technical Advisory Team
- Existing Plan Synthesis (Marine and Terrestrial)
- Stakeholder Input
  - Questionnaire-Regional Planning Needs
  - Surveys and County meetings in Humboldt, Del Norte, and Mendocino

Table 1. Planning Team members, affiliation, and roles.

Ruth Blyther (Project Lead and terrestrial focus)	Natural Resources Services Division, Redwood Community Action Agency (RCAA)
Jennifer Bloeser (marine focus)	Pacific Marine Conservation Council (PMCC)
Moira McEnespy (Project Lead for SCC and Contract Manager)	California State Coastal Conservancy (SCC)
Nancy Cofer-Shabica, and Cope Willis	NOAA Coastal Services Center, Charleston, South Carolina (NOAA CSC)
Rebecca Smyth, Adrianne Harrison	NOAA Coastal Services Center, San Francisco, California (NOAA CSC)

Technical Advisory Team. Initial identification of potential Advisory Team members was based upon RCAA's Regional Watershed Coordinator contacts in each of the three counties, PMCC's marine contacts and contacts listed in The Conservation Fund's (TCF) report, *Conservation Prospects for the North Coast: A Review and Analysis of Existing Conservation Plans, Land Use Trends and Strategies for Conservation on the North Coast of California.* The Planning Team refined this list based on the potential members' regional perspective and knowledge, coastal conservation focus, and ability to provide thoughtful input. Invitations to participate in Linking Land and Sea by attending an initial kick-off meeting were sent by email to 34 people. Follow up phone calls were also made to key individuals. Twenty potential Advisory Team members participated in the initial kick-off meeting in Humboldt County on January 18, 2006. At this meeting, the Advisory Team provided input on regional coastal conservation planning needs, identified key stakeholders and existing plans, and reviewed project methodology. Throughout the project, Advisory Team members also provided assistance with regional meeting organization and outreach, and review of the draft and final Needs Assessment documents. The final Advisory Team consisted of 17 members (three people who attended the

initial meeting decided not to participate for various reasons) from various backgrounds and counties within the region. Appendix A lists the members and their affiliation or area of expertise.

2.2 Existing Plan Synthesis

RCAA and PMCC reviewed and summarized existing marine and terrestrial plans/assessments as a basis for identifying regional needs and gaps, and developing potential coastal conservation recommendations (Table 2). More time was spent on synthesis of Marine Plans because of the lack of any previous efforts along these lines. Note that only one plan, The Nature Conservancy's *Northern California Marine Ecoregional Assessment* specifically considered the continuum between terrestrial and marine resources. This plan was reviewed in both the terrestrial and marine syntheses.

Marine. PMCC identified and reviewed 13 existing marine plans, ranging in scope from national to regional. This review resulted in a PMCC report, Synthesis of Existing Marine Planning Documents (Appendix B), which summarizes the plans, documents gaps in marine planning, and identifies opportunities for land-sea connections.

Terrestrial. The Conservation Fund (TCF), *Conservation Prospects for the North Coast,* provided a comprehensive assessment of the current status of terrestrial coastal conservation, including an inventory of existing plans and conservation organizations. RCAA reviewed this document along with two recent conservation assessments by The Nature Conservancy and combined and organized the recommendations (both region-wide and by Hydrologic Unit) into themes (data, education, training, collaboration etc). Grouping the recommendations in this way made it relatively easy to identify gaps in existing plans. The complete Terrestrial Plan Synthesis can be found in Appendix C.

Table 2 Existing marine and terrestrial reports reviewed and summarized in synthesis reports

Marine Plans	***Prepared/Published By***
National	
1. America's Living Oceans, Charting a Course for Sea Change.	Pew Commission on Ocean Policy
2. An Ocean Blueprint for the 21st Century	U.S. Commission on Ocean Policy
West Coast	
3. Pacific Coast Groundfish Essential Fish Habitat Final Environmental Impact Statement	Pacific Fishery Management Council / NOAA Fisheries
California	
4. Protecting Our Ocean - California's Action Strategy	California Resources Agency and California Environmental Protection Agency
5. California Coastal and Ocean Science Needs Assessment	The California Ocean Science Trust
6. California Ocean and Coastal Information, Research and Outreach Needs Workshop Final Summary Report	Ocean Protection Council
7. California Ocean and Coastal Information, Research, and Outreach Strategy	Ocean Protection Council
8. California Sea Grant Strategic Plan 2006 – 2010	California Sea Grant College Program
9. Marine Life Management Act	California Dept. of Fish and Game, Marine Region
Contain Region Specific Elements	
10. Marine Life Protection Act	California Department of Fish and Game
11. Critical Coastal Areas Plan 2002	California Coastal Commission
12. California Coastal National Monument Cooperative Management Plan	California State Office Bureau of Land Management
13. Northern California Marine Ecoregional Assessment	The Nature Conservancy
Terrestrial Plans	***Prepared/Published By***
1. Conservation Prospects for the North Coast	The Conservation Fund
2. Working Toward a Humboldt – Del Norte Conservation Vision: Identifying Regional Conservation Priorities	The Nature Conservancy, Save-the-Redwoods League, North Coast Regional Land Trust
3. Northern California Marine Ecoregional Assessment	The Nature Conservancy

2.3 Stakeholder Input

Stakeholder input was largely obtained at **three facilitated meetings** (one in each county). The meetings were organized and led by RCAA and Planning Team members. Data were gathered at the meetings through a Needs Assessment Survey and Regional Planning Questionnaire. Stakeholders and Advisory Team members were invited to the meetings through email and telephone contact. The meetings were approximately three hours in length and included presentations describing the project and its goals as well as information on existing terrestrial and marine planning efforts. The stakeholders participated in facilitated discussions regarding whether or not there is a need for more planning. Notes were taken on flip charts during this discussion. Participants were then provided with detailed instructions on completing the project survey and questionnaire. The three Regional Meeting Agendas and Summaries are included as Appendix D.

Selecting the Stakeholders. The Planning Team and Advisory Team assisted in identification of the Linking Land and Sea Stakeholders (Appendix E). According to TCF's study, there are over 100 terrestrial conservation organizations in the region; however, many of these terrestrial conservation organizations have a very specific geographic focus (a watershed, a coastal area, a municipality etc.). Because of the regional scope of this needs assessment, Linking Land and Sea focused on stakeholders known to provide thoughtful insights for coastal conservation and have at least one of the following attributes:

- Provide a regional perspective;
- Integrate marine and terrestrial conservation in their planning or project implementation; and
- Demonstrate a high degree of success in coastal conservation or having a high potential for success either because of geographic area or issue focus.

Table 3 Synopsis of Stakeholder participation

Stakeholder Type	Invited	Participated	Regional Planning Questionnaire	Needs Assessment Survey
Private Non-Profit Conservation Organizations	60	26	20	19
Tribes	11	3	1	3
Local Government Entities	21	6	3	2
State Government Entities	27	10	7	6
Federal Government Entities	14	5	3	5
Education Institutions	12	5	5	4
Private Business	25	7	7	6
TOTALS	**170**	**62**	**46**	**45**

Questionnaire for Regional Planning Needs - The *Regional Coastal Conservation Planning and/or Implementation Questionnaire* (Appendix F) was developed in order to gather input as to whether more regional coastal conservation planning is needed for the North Coast, and if so, what type? Participants were asked to consider the need for specific types of plans including those focusing on:

- Marine conservation;

- Terrestrial conservation;
- Connecting terrestrial and marine ecosystems;
- Specific regional priorities; and/or
- New plans to identify other specific needs.

The questionnaire also requested information from the stakeholders regarding priority gaps in existing coastal conservation plans; and the need for implementing existing plans.

Surveys - The *Linking Land and Sea Survey* was developed in order to perform the assessment in a quantifiable manner, and determine priorities for each organization and for the region. The survey was designed to assess each conservation **organizations' specific needs** in order to successfully implement coastal conservation projects. The survey also asked stakeholders to quantify the **regional needs** to support coastal conservation on the North Coast region.

Basic Survey Design

Stakeholders were given an 8-page survey (Appendix G) with instructions that they had 200% resources (or $200) to spend – 100 on their own organization's needs (organization specific), and 100 on regional needs. Stakeholders were to consider their immediate needs and what they thought their organization and the region would need in the next 5-10 years. Table 4 depicts a sample of how a stakeholder chose to spend their 200% "resources" or $200.

The survey consisted of seven broad need categories each with a number of specific needs available for selection. The categories included:

- Organizational Needs (Building and Maintaining your Organization);
- Data Needs (Development of and/or Access to the Best Available Science and Information);
- Social-Political Needs (Enhancing Collaboration, Incentives, and Policies);
- Outreach and Education Needs (developing Community Stewardship);
- Training and Technology Needs;
- Regulatory Needs (Understanding and Improving the Regulatory Environment); and
- Other (any additional needs not represented on the survey)

Table 4. Example of "resource distribution" from one Humboldt County conservation organization - The person prioritizes their organizations need for training and technology by spending the most resources in that category. The priority regional needs were identified in the social-political category. The detailed worksheets that the stakeholder filled out would show the specific conservation organization needs.

List of Potential Needs Categories (See attached forms for more details)		Enter your final percent/amount spent in each category to total 100 per column.	
		Your Org. Needs	Regional Need
I.	Organizational Needs	7	3
II.	Data Needs	20	20
III.	Social-Political Needs	3	30
IV.	Outreach and Education Needs	20	15
V.	Training and Technology Needs	30	10
VI.	Regulatory Needs		7
VII.	Other *(you decide)*	20	15
	TOTAL (should be 100 in each column)	100	100

Utilization of Survey Data

In order for the survey data to be utilized in the Needs Assessment, it was necessary for the Stakeholders to fill the forms out correctly. For instance, if the numbers in each column (see the example above) did not add up to 100, it was impossible to utilize those numbers when determining final results. After the first meeting in Humboldt County it became apparent that the directions needed to be more explicit. At the Del Norte and Mendocino meetings a sample that was correctly filled out was provided and the pre-survey instructions were described with more clarity, stressing the importance of a properly filled out survey. In most cases, RCAA staff contacted stakeholders to complete the survey again if the form was improperly filled out; however, of the 51 surveys that were completed by stakeholders, six could not be utilized.

After the meetings, surveys were reviewed to ensure they were filled out accurately, sorted by stakeholder type, and survey data were entered into spreadsheets. A spreadsheet was developed for each need category and numbers were entered for each individual survey; this allowed results to be sorted by stakeholder type. These numbers were tallied to identify priorities within each need category and between categories. Bar graphs were developed from spreadsheets to allow for visual representation of obvious priorities and trends. The resultant bar graphs in Section 4. display these priorities. For more detail in each category (e.g. exactly which subcategory resources were "allocated," or which stakeholder type did the "allocating"), Appendix K provides a full accounting of stakeholder responses.

One-on-One Interviews

Based on the stakeholder representation reflected in the attendance at the regional meetings, the Planning Team determined that there was a need to collect additional information from marine stakeholders. In order to obtain more comprehensive, diverse input regarding marine conservation planning and implementation needs, six interviews of one to two hours in length were conducted with marine professionals. The individual interviews, which allowed for in-depth conversations and dialogue, were based on similar questions that were drafted for the regional meetings. The results from these interviews were incorporated into the results, discussion and recommendations sections of this report.

3. RESULTS

Linking Land and Sea Needs Assessment results are presented in the following order:

- Need for Regional Planning – results from 'Questionnaires' and stakeholder meetings (Sections 3.1 and 3.2);
- Organization and Regional Needs – results from the 'Stakeholder Survey' (Section .3.3); and
- Existing Terrestrial and Marine Plans/Assessments – synthesis of existing plans (Section 3.4).

Each method of information collection provided distinct data results. Open-ended 'Questionnaire' responses were diverse and not easily summarized. 'Survey' responses provided quantitative data, presented here as bar charts. Synthesis of marine and terrestrial plans (Appendices B and C) focuses on recommendations regarding land and sea linkages.

3.1 Need for Regional Planning

Stakeholder meetings were conducted in early 2006 in Mendocino (March 22), Humboldt (February 18), and Del Norte (March 14) Counties and were attended by a total of 62 people. Forty-six participants completed a *Regional Coastal Conservation Planning and/or Implementation Questionnaire.*

Stakeholder questionnaire responses and meeting discussions provided a great deal of information regarding the status of planning in the north coast region. Detailed summaries of each county meeting discussion and Questionnaire feedback can be found in Appendix F. This section further condenses the meeting results without losing content and reflecting the depth and richness of the stakeholder feedback.

Do We Need More Regional Coastal Conservation Planning?

Of the 46 written responses to this question, twenty-nine people (63 percent) responded that more regional planning is needed to address marine resources and/or the connection between marine and terrestrial ecosystems.

Eleven participants answered **"maybe",** and noted that the first step should be to categorize existing plans and then fill the gaps. Six participants answered "**not sure"** because they did not have enough information about what plans exist and the information contained within them. All of the participants agreed that they **need a better understanding of**:

- What plans currently exist;
- What goals, objectives and recommendations they contain; and
- How they link together and compliment each other.

Responses indicated that the region needs a mechanism to knit together existing planning efforts – both those completed and those planned. This mechanism should include a spatial representation of existing plans, a database with links, be centrally housed and be updated regularly. It would be useful to categorize existing plans (marine and terrestrial) and to clearly identify and prioritize planning gaps that exist. Having a central clearinghouse for information and a few people who are knowledgeable about what exists and can then educate others would be very helpful.

It was noted that there is a great deal of variability between the plans, and that very few are peer reviewed. It would be useful to integrate existing plans as many of them have a narrow focus (e.g. birds, marine habitat, open space, development, land use, recreation).

Do We Need More Marine Planning?

A 'regional marine resources conservation plan' should be developed that contains strategies to accomplish explicit short- and long-term objectives at various geographic scales. However, there is a lack of data for developing such a plan. Very little detailed information exists regarding marine resources specific to the state's North Coast. Basic marine seafloor habitat mapping (GIS layers of marine resources) needs to be conducted in this region. The region needs a coordinated mechanism to identify and monitor mapping and research activities and facilitate the sharing and management of data for marine planning.

Do We Need More Terrestrial Planning?

Five Questionnaire responses indicate that there is no need for more terrestrial conservation planning. Specific responses were:

- There are hundreds of existing (terrestrial) plans, and no one person can know what is in all of these plans. (Note: Conservation Prospects for the North Coast (The Conservation Fund, 2005) has a good synopsis).
- There are so many plans it is difficult to know if there is a need for more or what type of planning is needed.
- It seems like it would be good to take a break in terrestrial planning so people can catch up with what exists.

Seven stakeholders who identified a need for more terrestrial planning were specific about the type of plans needed. "We need more site-specific plans that lead to implementation." There is a need to constantly review, update, **adapt and improve existing plans along with the need to implement** projects on the ground.

Need to Address the Connection Between Marine and Terrestrial Resources

Twenty-eight Questionnaire responses (61 percent) indicate a **need to integrate marine and terrestrial plans** and to complete more planning efforts **that address terrestrial and marine resource connections.** County stakeholder meeting discussions and Questionnaire responses recommended a number of ways to address the 'land to sea continuum':

Effects of Terrestrial Land Use on Marine Resources

- The impacts of terrestrial land use practices on marine resources and inter-tidal and estuarine ecosystems should be addressed. We need to understand the interaction between **sediment coming from the land and its affect on marine life**. For example, what are the sediment impacts from the major rivers on the near shore habitat? (Note: two reports exist – Jeff Borgeld's strataform project and an Humboldt State University thesis addressing Eel River sediment impacts on kelp beds.)
- **Making the connection** between increased biodiversity and a healthy marine ecosystem and fisheries – by studying and abating the impacts from coastal watersheds – will be extremely beneficial on many levels.
- Marine resource protection, through the use of marine protected areas (MPAs) or other forms of ocean zoning can best be moved forward by making a strong connection between impacts to these resources from coastal watersheds.

- First, finish marine planning; then integrate with terrestrial plans if an identified need.

Estuaries

- "What's being done to protect and enhance estuaries in our region?"
- What are the current conditions of and threats to regional estuary habitats? (Note: addressed somewhat in TNC and SRL regional planning efforts.)

Data/Education

- More **education** regarding the linkages between marine and terrestrial ecosystems is needed. There **are a few data sets** currently available that would increase our understanding of some marine/terrestrial relationships.
- An **on-site inventory** of resources should be developed and **public access** to information marine conservation planning documents should be increased. For example, the *Mineral Management Surveys*(Minerals Management Service, US Department of Interior, various dates) contain a lot of Mendocino coastal data, but is not readily available.
- **Data** are needed on the impacts of river water quality on marine resources; and potential of long term effects of global warming on ocean levels, etc.

Overlap in Existing Plans

- Analyze where existing marine and terrestrial plans overlap. Integration of marine and terrestrial plans can be accomplished by thinking of them as merely one plan**.**
- Anadromous fish are an obvious link between freshwater or terrestrial and marine habitats, but there are also other less obvious links, such as the marbled murrelet, other seabirds, and many other species that move between the two.

3.2 Implementation Strategies for Existing Plans

Twenty Questionnaire responses (43 percent) identified the **need to implement existing plans**. Additionally, during discussion, stakeholders at all meetings felt this was a high priority. It is a priority to make sure there are funds to implement existing plans.

There was specific mention of several plans that people wanted to see more resources focused on for implementation:

- The California Coho Recovery Strategy (Department of Fish and Game, 2005)
- The Smith River Anadromous Fish Action Plan (Smith River Alliance, 2005)
- Mendocino County Coastal Conservation Plan (Mendocino Land Trust, 2005)

Other: The North Coast Needs Plans That…

Lead to Implementation

- Can be implemented and that provide for a human and natural resources future.
- Prioritize across the north coast. Save the Redwood's perspective: Where within the range of coast redwood should we focus our efforts?
- Lead to Action that addresses the impact of human activity on wildlife (vehicle-induced injuries, monofilament, deliberate cruelty, etc)

Are Ecosystem Based

- Forecast trends: Modeling is important to help us understand the impacts of our management decisions. Trend forecasts can be a real motivator for policy implementation.

Have a Specific Geographic or Resource Focus

- Contain more detail to be useful for our area (Gualala). Identify areas that fall between two larger plans – that fall through the cracks.
- Are more geographically focused and address estuarine restoration in Humboldt Bay; and cover the Eel and Smith Rivers, and the coastal tributaries that have been overlooked in planning (Bear River).
- Plans/strategies that address site-specific issues along the coast such as improved access/trails, discharge to ASBS/Critical Coastal Areas.
- We need basic marine habitat mapping.
- Invasive exotics management/eradication plans

Educate

- Create basic knowledge on terrestrial/marine linkages
- Recognize the need to educate the public as to why plans are needed and how they will benefit the community.
- In addition to ecosystem-based planning, we need assistance with sociological planning and getting the political support required for conservation in this region.

Summarize and Prioritize

- Summarize what already exists, determine what is out there. Conservation needs that are the result of local input should be the only ones given high priority.
- The region needs a way to organize, summarize and catalogue existing plans

Important Gaps In Existing Coastal Conservation Plans

Stakeholder meeting participants were asked to identify gaps in existing plans to the best of their knowledge. During discussions, this was a difficult topic, as many people did not feel they had enough knowledge of existing plans – especially marine plans. On the Questionnaire, 27 responses identified gaps in existing plans, including:

Long range forecasts

- Reliable **long-range forecasts** and trends information in ecosystem change/impacts is needed so people know where we are headed. Forecasts can be used to add a sense of urgency and increase public awareness and support for conservation.

Data Gaps

- Significant need exists for regional and local data on fish recruitment and documentation of the importance of **estuarine habitat to marine fish** and invertebrate recruitment.

- **Marine fisheries data** especially regarding **nursery locations**: Off shore? Near shore? Deep reefs? You can manage fish and conservation only if you have these focused data to support the management decisions.
- **Data gaps that exist regarding the marine/terrestrial ecotone should be categorized and prioritized**. These data gaps include mapping of marine habitats, water quality impacts to marine environment, depiction of seasonal changes and natural variation, and the bathymetry of small-scale areas among others.
- Lidar coverage is very sporadic: the North Coast needs coverage for prioritized areas.
- Need recent data on **Coho abundance** and more site-specific data for steelhead.
- Need good facts-based assessment on what **baseline data** currently exists, what is the use of the area, and what are the current needs of existing conservation areas.
- Need **seamless coverage** of the coast with comparable data sets, so patterns can be identified.

Implementation Strategies

- Most of the existing plans for the region lack specific **implementation and funding strategies**.
- A significant gap is being able to **identify actions** that will affect the most critical limiting factors or "drivers" of habitat degradation and then having the resources to do something about them.
- Need staff to implement existing plans and trained people to volunteer.
- There is a gap between strategic vision and project implementation. Building the collaborative partnerships, conducting necessary research and analysis, finding the funds, obtaining permits, garnering public support, etc... all need to be completed before implementation can occur.

Education and Public Relations Regarding Conservation Plans

- Need a **strong educational component**, so people can see that they ultimately will benefit from coastal conservation.
- Dissemination of knowledge, existing plans, and current information. Need a huge public relations and public information blitz. Awareness of what is in the existing plans is thin, maybe non-existent.

Other Gaps

- Need to address resource management on **private lands**.
- Community shoreline park potentials.
- Effects of seawalls, armoring, riprap, and sea level rise on shoreline/estuaries/near shore resources.
- Balancing coastal recreation with resource/species conservation/preservation.
- Addressing **commercial interests and resource-based industry** (marine and watershed-based.)
- Include **wildlife rescue and rehabilitation** centers, (seabirds and shore birds, especially important for rare/threatened/endangered species and during oil spills/disasters).

Is there a need for more specific (local geographic focus or resource focus) plans within the region? If so what would be the specific focus?

Twenty-eight people provided written responses to this question (23 yes, 3 no, 2 maybe). One person that answered 'no' remarked that various parties within the region will make opportunistic use of existing plans, and that conservation strategies will arise in this way. 'Maybe' responses related to the need to understand more about what existing plans say.

Specific responses from the Questionnaire and the discussions during the meetings resulted in a number of ideas for more specific plans in the region. These can be categorized into plans with specific geographic focus, either estuary or coastal sites or watersheds; or plans focusing on specific types of resources or resource use. These are presented in Table 5 below. Responses that were more detailed or had a data/information/research focus are presented as bullets.

Data/Information/Research-Specific

- **Follow up on oil spill prevention and response** (DFG/OSPR). The current plan has a large amount of information about coastal resources that could be damaged by oil spills. Need to add to this effort and gather more and more detailed/better baseline data and add information.
- Increased information on **sea level rise** due to climate change and the potential impacts to coastal resources.
- **Watershed level planning** to identify potential sites for conservation.
- Regional priorities should be specified and developed from an **ecosystem-based** management approach. Such a plan should identify ecosystem-based management projects for watershed/estuary/near-shore ecosystems.
- Identify areas that should be conserved as shoreline parks (bluffs, beaches, estuaries).

Table 5 Ideas for Plans with Specific Focus

Response by County	Geographic Focus Site Specfic	Geographic Focus Watershed/River	Resource Focus
Del Norte	Estuary of Elk Creek, Smith River; Crescent City Harbor. Restoration plan for Lake Earl Lagoon, wildlife area and WS and Tolowa Dunes State Park..	Smith River; Klamath River watershed wetland conservation plan. Coastal streams action plan between Klamath and Oregon border.	Conservation plans, ditch the bogus "multi-use plans". Seventh generation kind of thesis. Bird rehab as mitigation coastal access impacts.Need focus on education & wild bird rescue is a good vehicle.
Humboldt	Humboldt Bay and Eel River with focus on the estuaries	Eel River fisheries, and water and sediment supply and management. Mattole River long-term infrastructure plan	Restoration of diked tidelands. Coastal plans, which are a nexus of natural resource, agriculture, recreation, and residential/commercial values.Terrestrial land management and how it relates to MPA, CCA, ASBS
Mendocino	Ten Mile River and Albion River estuaries. Gualala geologic study water runoff land sediment slides. Pygmy forest.Cottoneva creek public access	Estuaries and places with watershed wide significance to protection of aquatic and marine biodiversity.	Trails, stewardship forestry, conservation of marine and inter-tidal resources, fishery & watershed restoration. Address exotic invasives.Priorities for conservation across the range of coast redwood. Public access to seashore. Seashore armoring & influences on marine life & public access

Focus on Implementing Existing Plans

A total of 32 people responded to the following statement: "We don't need any more planning, we need to focus on implementing plans we already have." The responses were: Strongly Agree, 12; Somewhat Agree, 8; Neutral, 8; Somewhat Disagree, 6; Strongly Disagree, 1 (for marine and estuaries). Responses in the discussions and from the Questionnaire included:

- Need both **more planning and help in implementing existing plans**. "My organization (SRL) primarily needs help with implementation (we have sufficient funds for planning)."
- Implementation of identified strategies is where resources and efforts should be focused.
- Need additional agency staff capacity (more of them and with better resources) to work with conservation partnerships. Example, the need for streamlining the permitting process is identified on a regular basis, and if there were **more agency staff (DFG, CC, NMFS, COE), permit processing would get done faster.**
- The need is for **implementing actions** that have clear benefits to terrestrial and marine resources.
- Existing planning efforts have provided one valuable byproduct: digital **GIS-based data**. The next focus of any conservation planning effort should be getting this information into the hands of those who are going to be on the ground identifying specific projects for implementation.

- Plans are much like statistics: they are used by people to prove they are right but unless they are implemented no water quality improves, fish populations don't increase, etc.... We need both - implement existing plans and fill gaps where needed. **Adaptive management is the key**. Implement what is "on the shelf" but build upon what will be done or needs to be done.
- Strongly agree if implementation means abandoning intrusive, recreational activities.
- Conservation plans should be cross-referenced with other plans such as economic, transport, and land use plans.

Coordination and Collaboration

- **Agencies should assist with helping to coordinate funding,** finding other matches and bringing others to the table. Example: in one acquisition project, instead of the agencies working together, the initial funding agency required the local organization to find matching funds. This added another step for the local organization, made up of volunteers, to go and find the match funding for acquisition. Since the matches often come from other government agencies they should assist in coordinating the search.
- **Project design -** the smaller organization/grantee needs better collaboration with other organizations and agencies.
- A lot of planning does not get implemented. Implementation will happen regardless of whether you plan or not – so if you do more planning "How do you make sure the plan reflects the reality of ongoing implementation?" We need **better coordination of projects that are being implemented** by numerous land managers and entities. "How can we connect projects and land management across ownerships and across public/private and agency to agency?"
- Rather than piecemeal conservation, we need better ways to **collaborate and do conservation on a larger scale by linking efforts.** From a land managers point of view we want to coordinate with adjacent properties. Agencies need to coordinate and communicate with each other and with private efforts.

Acquisition, Operation and Maintenance

- Need **more funds for acquisition and for operations and maintenance.**
- There is a lot of agency land in the region (especially Del Norte County), but agencies **lack resources and money for operations and maintenance**. They are under funded to manage what they have.

3.3 Priority Needs of Conservation Organizations

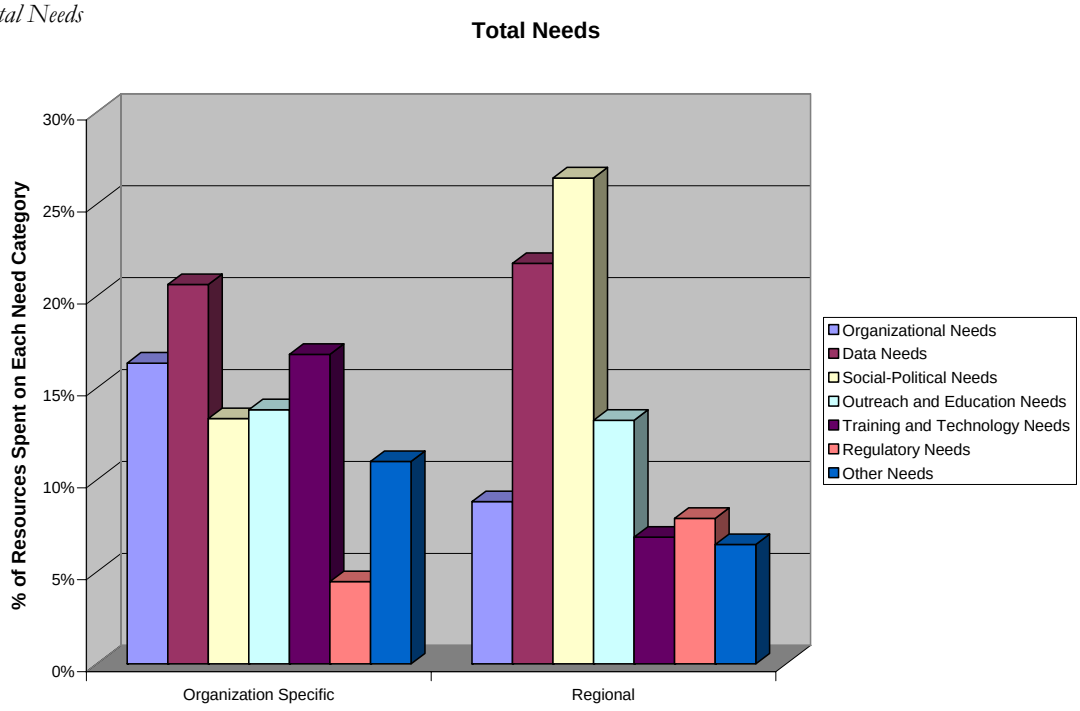
Priority Need Categories

This section presents results from 45 Needs Assessment Surveys conducted at three County meetings. The results are presented by need category: Organizational, Data, Social-Political, Outreach and Education, and Training and Technical. The results are shown for both organization specific need (What does your organization need?) and regional need (What is needed across the region to improve coastal conservation?).

There were a total of 4500 points available for organization specific needs and 4500 for regional needs (45 surveys, 200 points each). The priority categories (Figure 1) for **organization specific** needs were Data

(21% of total), and Training and Technology (17%), followed closely by Organizational Support needs (16%), Outreach and Education (14%) and Social-Political (13%). For **regional** needs the two highest priority categories were Social-political (26%) and Data (22%). There were slight differences in Organization Specific needs by stakeholder type: with Government (Local, State, Federal) prioritizing data, and training and technology; Private Business prioritizing socio-political needs; Education organizations prioritizing data; and NGOs prioritizing organizational support needs. Regulatory and "Other" needs were a low priority across the board. Regional need priorities were similar for all stakeholder groups.

Figure 1. Total Needs



Priority Needs Within Each Category

Organizational Needs

Overall Organizational Needs: Building and Maintaining Your Organization was a high priority from an **organization specific** perspective receiving 16% of the total available resource points for this category. Within this category there were two clear priorities for Organization Specific Needs: Solutions/strategies to covering up front costs of developing projects (29%); and State General funding (not tied to bond acts) for Coastal Conservation (19%) (Figure 2). From a **regional** perspective the need priorities were Support for developing implementation strategies for Regional Marine and Coastal Conservation Plans (34%); and State General funding (not tied to bond acts) for Coastal Conservation (27%) (Figure 3). NGO's also identified assistance with creation of business and marketing plans; and strategies to cover or reduce indirect operating costs as priority needs. Otherwise the stakeholder responses were similar.

Figure 2. Priority Organization-Specific Organizational Needs

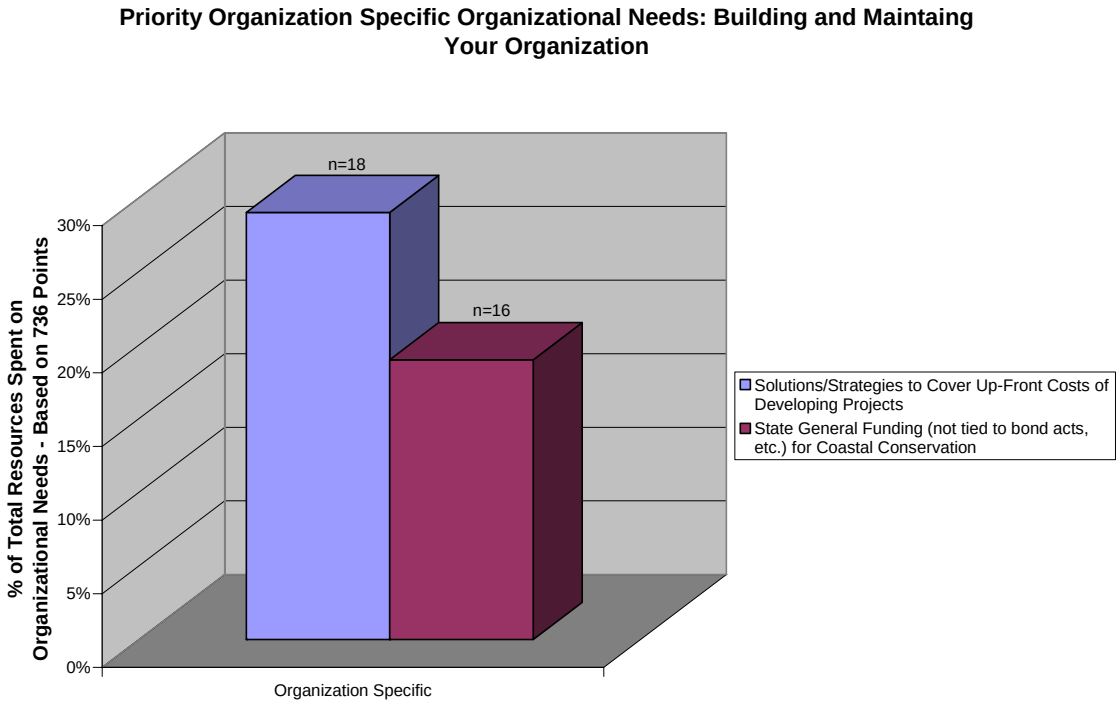
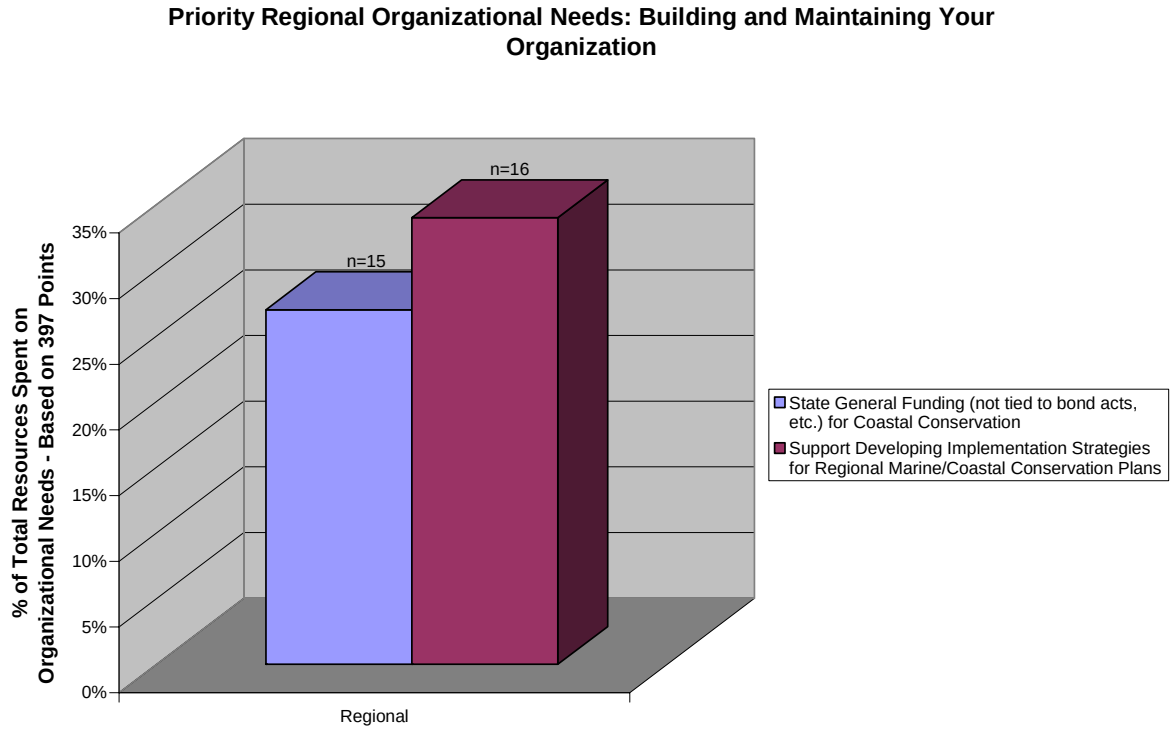


Figure 3. Priority Regional Organizational Needs



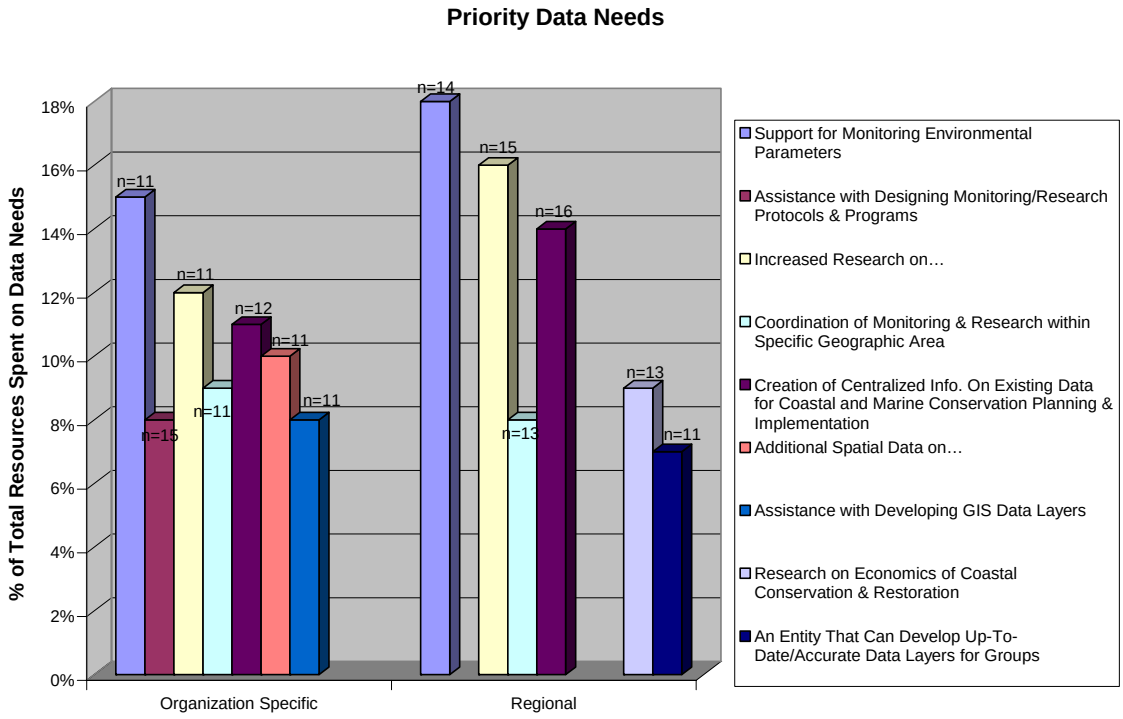
Data Needs

Data Needs were a high priority from an organization specific perspective (21%) and from a regional perspective (22%). Within this need category there were a larger number of priorities identified (Figure 4). **Organization specific** need priorities were: Support for Monitoring Environmental Parameters (15%); Increased Research (12%); and Creation of a Centralized Information on Existing Data for Coastal and Marine Conservation Planning and Implementation (11%). **Regional** need priorities were Support for Monitoring Environmental Parameters (18%); Increased Research (16%); and Creation of a Centralized Information on Existing Data for Coastal and Marine Conservation Planning and Implementation (14%).

The federal government entities prioritized the Support for Monitoring of Environmental Parameters; NGO and State government prioritized Creation of Centralized Information on Existing Data to Support Coastal and Marine Conservation Planning and Implementation.

There were numerous parameters identified under Support for Monitoring Environmental Parameters; the most prevalent being water quality and sediment. Increased Research comments were all across the board; marine and estuary topics were common but no one topic was selected by multiple people. To see a complete list of the qualitative comments go to Appendix J.

Figure 4. Priority Data Needs



Social-Political Needs

Overall Socio-Political Needs: Enhancing Collaboration, Incentives, and Policies, was a high priority from a **regional** need perspective receiving 26% of the total available resource points (Figure 5). Within this category the priorities were: Improved Collaboration with Conservation Partners (13%); Incentives for Resource Users (12%); and Incentives for Landowners Conducting Conservation Activities (11%), and Development of a Regional Funding Mechanism (11%). This category was not as high a priority from an **organization specific** need perspective and received only 13% of the total points available. The Organization Specific needs in this category were similar to the Regional needs as the graph below shows (Figure 6). All stakeholder groups dedicated points/resources to the need for improved communications or

collaboration with conservation partners. NGOs, State Agencies, and Private Business gave higher priority to the regional funding mechanism. Incentives for landowners were mainly a priority for NGO and State agency representatives.

Figure 5. Priority Regional Social-Political Needs

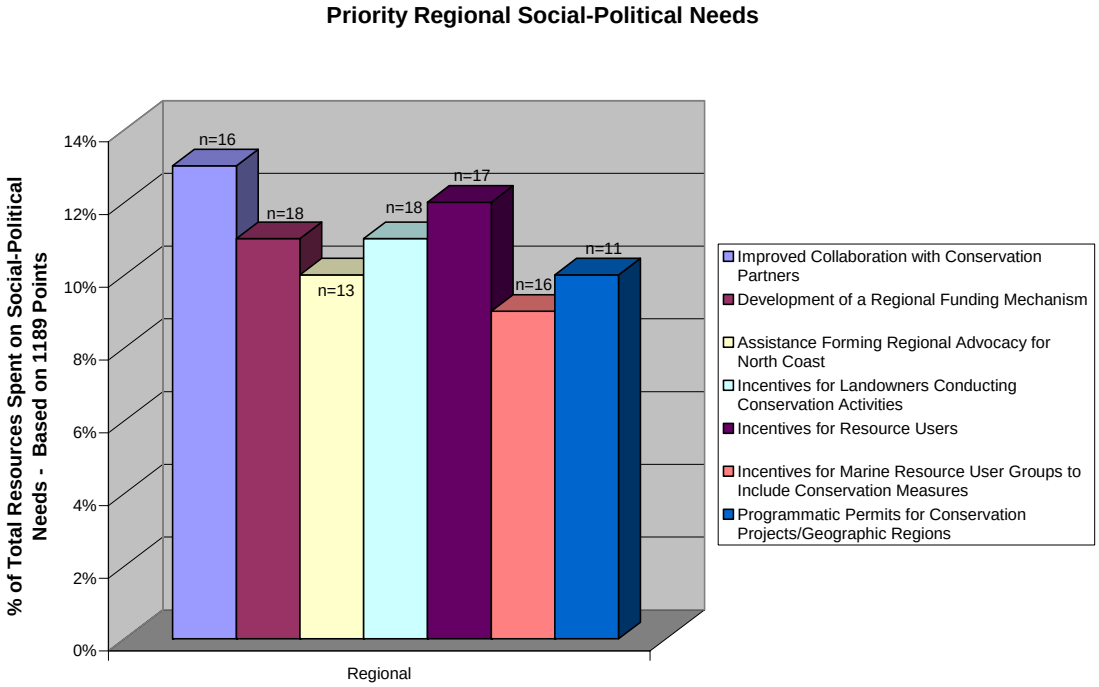
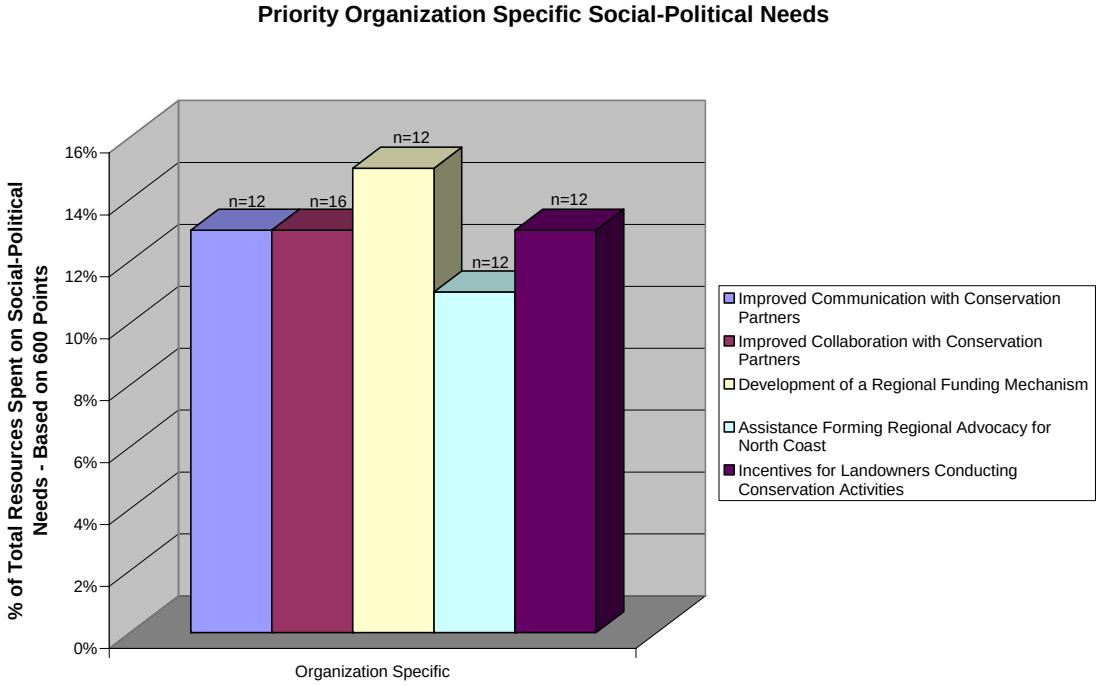


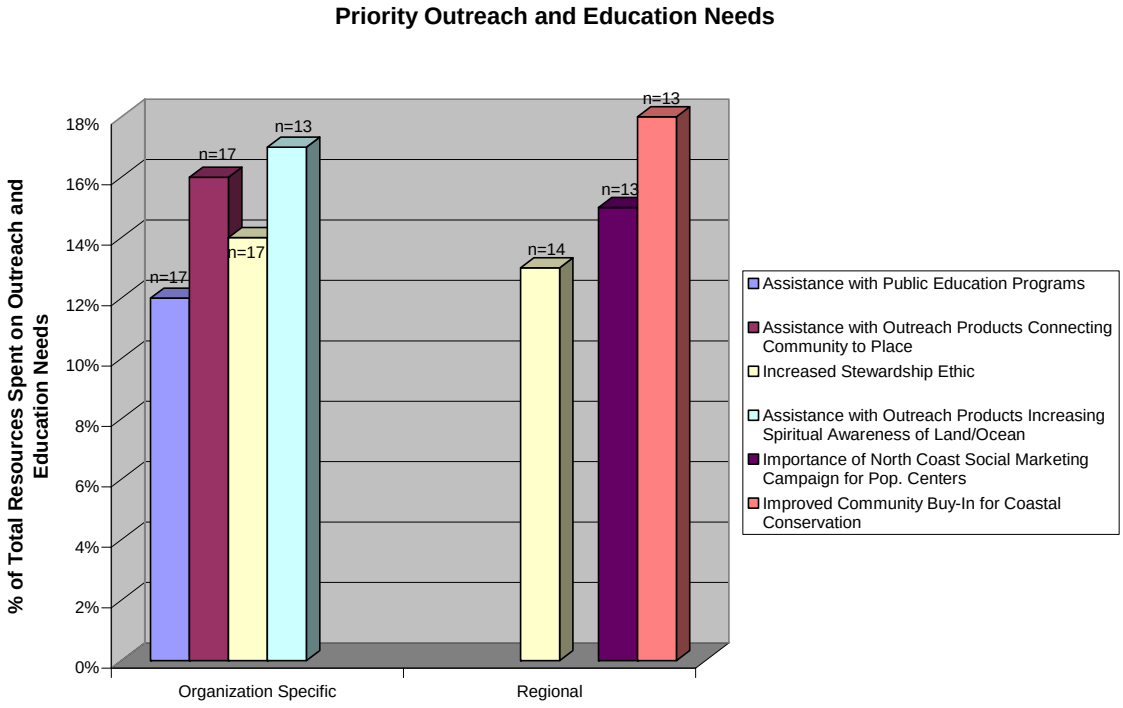
Figure 6. Priority Organization-Specific Social-Political Needs



Outreach and Education Needs

Overall Outreach and Education received 14% of the Organization Specific and 13% of the Regional points, making it a medium priority (Figure 7). The Organization Specific priorities were different from the Regional ones. The highest **organization specific** priority was Assistance with Outreach Products that Increase the Spiritual Awareness of Land and Ocean (17%) followed by Outreach Products Connecting Community to Place (16%). The **regional** priorities were Improved Community Buy-in for Coastal Conservation (18%); and Importance of North Coast Social Marketing Campaign for State Population Centers (15%). NGO's were most interested in support for and assistance with public education programs and increased stewardship ethic. Private business and tribal entities prioritized assistance with increasing awareness of the spiritual and historical context of the land and ocean.

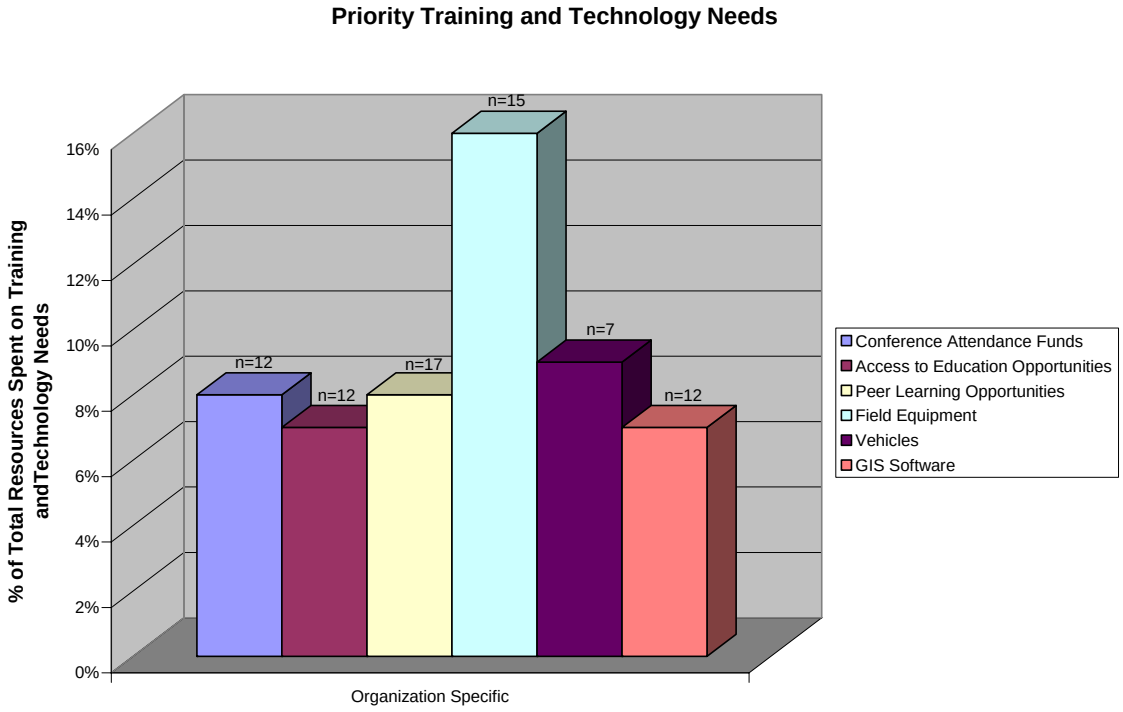
Figure 7. Priority Outreach and Education Needs



Training and Technology Needs

Training and Technology Needs was the second highest priority for Organization Specific needs with 17% of the total points (Figure 8). It was not a high priority from a **regional** need perspective with only 7% of the total points. The Organization Specific priorities were Field Equipment (16%) followed by vehicles (9%), Peer Learning Opportunities (8%), and Conference Attendance Funds (8%). The highest Regional Need was Increased Venues for Sharing Information (28%).

Figure 8. Priority Training and Technology Needs



Regulatory Needs and Other Needs

These two categories did not rank highly in the survey. Regulatory Needs received only 4% and 8% respectively of the **organization specific** and **regional** needs points. While the Other Category received 11% in Organization Specific needs this was due to one participant putting all their points (for Operations and Maintenance in this category). Figures of these categories can be viewed in Appendix I.

3.4 Existing Marine and Terrestrial Plan Synthesis – Overlap

Issues and opportunities that link terrestrial and marine ecosystems have not been addressed in existing plans in a focused and comprehensive manner for the North Coast region. The exception is the recently completed *Northern California Marine Ecoregional Assessment* (The Nature Conservancy (TNC), 2006) that includes assessment of marine and rocky shore, estuary, wetland, dune, coastal forest and prairie resources. According to TNC "the goal of the assessment was to identify a *portfolio* of conservation areas that contain multiple and viable examples of important ecological systems, communities, and species represented across environmental gradients." All of the other marine planning documents reviewed for this assessment focused solely on the marine environment with very little overlap or connection identified to terrestrial environments.

The linkages between the terrestrial and marine environment need to be more clearly identified and assessed. One significant linkage is the flow of freshwater, containing sediments and pollutants, through watersheds to the near shore marine environments. This issue may offer a tangible starting place for quantifying a terrestrial/marine ecosystem linkage and presents the opportunity to take a more ecosystem-based approach to conservation issues in these environments. The following is synopsis of the existing issues identified in both the marine and terrestrial plans found in the marine and terrestrial plans listed in Table 2.

- There is a lack of coordination and collaboration between existing coastal, ocean, and watershed organizations and management entities.
- Terrestrial land use and runoff has impacts on near shore water quality and habitat, but there is a lack of understanding and data regarding what the impacts are and where they are occurring. What are the impacts of non-point source and storm water pollution on coastal environment? We need to understand the interaction between sediment coming from the land and its affect on marine life. What are the sediment impacts from the major rivers on the near shore habitat?
- Non-point source pollution (especially sediment) and water quality protection on a watershed basis should be addressed in marine and coastal planning and conservation strategies.
- The watersheds that are critical for coastal and marine resource protection (Critical Coastal Areas and ASBS) need sufficient technical and financial assistance to ensure that the waters they deliver do not adversely impact coastal resources.
- There have been numerous efforts to control and reduce non-point source and storm water pollution but there is a need to evaluate and monitor their effectiveness and to apply adaptive management.
- Estuary research is lacking in the region.
- Coastal communities manage coastal resources through local and County planning (Local Coastal Plans - LCP). There is a need to update and/or improve the effectiveness of LCPs, by ensuring that the policies, goals and objectives/actions are implemented. Evaluating of the effectiveness of LCPs and making adaptive changes to address problems identified needs to be done on a consistent basis. Humboldt County recently evaluated its LCPs and is in the process of updating these plans. A group of senior Natural Resources Planning and Interpretation students from Humboldt State University did an assessment of the Humboldt County LCPs as an addition to the Linking Land and Sea project (Appendix K).
- Whether it is marine, coastal or terrestrial environment effective protection, conservation and enhancement requires an involved citizenry, educated decision makers, and organizations with capacity to carry out conservation programs.
- Conservation of marine and terrestrial resources will require strengthening incentives to resource users and landowners/managers; technical assistance; and enforcement of existing regulations.

4. INTERVIEWS

Information collected in one-on-one interviews of marine professionals for the Needs Assessment resulted in specific project needs and recommendations for the region.

Research and Data

- Research on total suspended sediment load arriving in Humboldt Bay and other sensitive coastal areas from watersheds.
- Research and monitoring on the impacts of the application of fishery management tools such as the groundfish trawl buyback and closed areas on the shelf and slope to impacted communities.
- Research on stormwater runoff infrastructure needs and improvements.
- Centralized Data Management System for Marine Systems- CICORE (Center for Integrative Coastal, Observation, Research and Education) cicore.humboldt.edu
- Dredge spoil disposal and prioritizing dredge disposal areas for restoration

Monitoring and Surveys

- Equipment and travel for marine mammal surveys (HSU, Northcoast Marine Mammal Research Center).
- Coastal Observation and Seabird Survey Team for this region. www.coasst.org

Socio Economic Information

- Socioeconomic and market assessments of the fishing industry in this region.
- Socioeconomic analysis of the potential for increased marine ecotourism
- Analysis of the potential for increasing aquaculture in Humboldt Bay.

Planning

- Development of an ecosystem based management plan for Humboldt Bay/Eel River Estuary, Smith River Estuary, Lake Earl/Tolowa Dunes.
- Plans and projects that measure and decrease the levels of pollution for the watersheds feeding into Humboldt Bay

5. RECOMMENDATIONS AND DISCUSSION

The following section identifies high priority needs; provides recommendations for filling these needs; and provides detailed discussion regarding the recommendations. The priority needs and recommendations are based upon a synthesis of the expert opinion from the Linking Land and Sea Planning and Advisory Teams, information gathered from the Needs Assessment survey, Regional Needs questionnaire, one-on-one interviews, and review of the existing terrestrial planning and existing marine planning. Table 6. provides a reference for the source of each recommendation.

5.1 Summary of Needs Assessment Recommendations

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.
4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.
5. Establish a regional funding mechanism for coastal conservation. Creation of an open-space district or other special district mechanism for the North Coast should be explored.
6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Mapping of marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.
9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy's Northern California Marine Ecoregional Assessment.
10. Develop site specific terrestrial and estuarine plans. See Table 4.1.1 for detailed site information.
11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay Harbor Recreation and Conservation District (HBHRCD), University of California Cooperative Extension Sea Grant (UCCE Sea Grant), NOAA Fisheries, California Department of Fish and Game (DFG) both marine and inland fisheries, The Nature Conservancy (TNC), Center for Integrative Coastal Observation Research and Education (CICORE), Legacy the Landscape Connection, county planning departments, Klamath Resource Information System (KRIS), CalFish data base, Central and Northern California Ocean Observation System (CENCOOS).
13. Provide for outreach and education regarding existing regional coastal conservation plans and priorities for implementation.
14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.

15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.
16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.
17. Create incentives for the use of best management practices by marine and terrestrial resources users.
18. Develop strategies for working with private landowners. Development of a regional strategy that provides an analysis of how conservation of coastal resources on private lands can be economically viable/desirable.
19. Support for and development of programs that connect people to place.

Table 6 Sources of the Needs Assessment Recommendations

Recommendations	Marine Plans												Terrestrial Plans			Surveys	Meetings/ Questionnaires	Expert Input
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3			
1						x			x	x		x				x	x	x
2	x			x	x	x			x			x	x	x		x	x	x
3																x	x	x
4	x	x		x		x										x	x	x
5																x	x	x
6												x		x	x		x	x
7			x									x			x	x	x	x
8	x	x		x	x	x	x								x	x	x	x
9												x			x		x	x
10					x							x	x	x			x	x
11													x			x	x	x
12		x												x		x	x	x
13																x	x	
14								x								x	x	x
15																	x	x
16	x																	x
17	x												x	x		x	x	x
18																x	x	x
19				x			x									x	x	x

5.2 Implementation of Existing Plans

Priority Need

- Implement priority conservation actions as identified in existing terrestrial and marine plans.

Recommendation

1. Provide resources for protection of (via easements, fee-title acquisition) priority coastal areas identified in existing coastal conservation plans.
2. Provide resources for adaptive management of existing conservation areas.
3. Increase staffing of state and federal agencies conducting coastal conservation.

Discussion

The existing coastal conservation plans are of limited use unless their recommendations are implemented. However, many of the existing plans for the region lack specific implementation and funding strategies. The challenge is to move from goals and objectives to project implementation. Many existing plans and assessments identify priority coastal resource areas to be protected for their unique habitat values, species, public access opportunities, open space, and/or cultural value but there is not enough funding to implement these recommendations.

In addition, many of the existing protected areas such as state and federal parks, wildlife areas, and refuges, have existing management and restoration plans but lack sufficient resources to implement, evaluate, and/or refine them. Over the past decade there have been significant cuts in both federal and state budgets for land management agencies such as California's Department of Fish and Game and State Parks, US Fish and Wildlife Service, US Forest Service, and the Bureau of Land Management. In addition, the California Conservation Corps, which used to carry out a significant amount of restoration work throughout the North Coast region has been severely reduced, and the Del Norte CCC Center was closed in 2004.

These budget cuts have resulted in loss of staff, and reduced capacity to conduct conservation activities from research and planning to operations and maintenance. Many of the participants in the Linking Land and Sea project stated that public lands should be used to model and perfect best management practices, implement adaptive management, and refine and evaluate restoration techniques. The public land management could provide models for conservation techniques that could be utilized on private lands.

Finally, going from goals and objectives to implementation requires the resources for building the collaborative partnerships, conducting necessary research and analysis, developing final designs and engineering, finding the funds, obtaining permits, and garnering public support. Agency staff play a large role in getting conservation projects implemented, and the lack of agency staff holds up many projects. Additional agency staff capacity (more of them and with better resources) to work with conservation partnerships would improve the efficiency of plan implementation. Example, the need for streamlining the permitting process is identified as a need on a regular basis, but if there were just a few more agency staff (DFG, CC, NMFS, COE) who could process permits, then the delays would be much shorter.

5.3 Building and Maintaining Conservation Organization Capacity on the North Coast

Priority Needs

- Strategies and/or funds to cover the up front costs of developing conservation projects
- Development of diversified funding sources that are long-term and sustainable

Recommendations

4. Develop long-term State funding sources for coastal conservation other than General Obligation Bond Funds.

   Example: The current Senate Bill 1125 would establish a permanent source of state funds by dedicating a share of the more than $200 million the state government expects to receive each year from its oil and gas leases on state-owned tidelands and ocean waters in Southern California. SB 1125 would annually allocate $10 million from these revenues for salmonid habitat restoration; $5 million, for the next ten years, for the Coastal Wetlands Account; $10 million to the Marine Life and Marine Reserve Management Account; $10 million to the Non-game Fish and Wildlife Program Account; $10 million to the State Park System Deferred Maintenance account; $5 million to the Wetlands and Riparian Habitat Conservation Account; and the remaining amount to the Natural Resources Infrastructure Fund.

5. **Establish a regional funding mechanism for coastal conservation.** Creation of an open-space district or other special district mechanism for the North Coast should be explored.

   Example: Sonoma Agricultural Preservation and Open Space District.

Discussion

Planning for and implementing coastal conservation would not be possible without conservation groups with robust organizational capacity. The North Coast Region is blessed with a large and diverse set of organizations, with a terrestrial focus, that are actively involved in coastal conservation planning and implementation, including local government agencies; non-governmental organizations; state and federal agencies; citizen groups; small businesses; land managers; tribes; and resource user groups. Functional organizations with a specific focus on marine and/or the link between land and sea are much less common.

Coastal Conservation is a rapidly evolving, complex, and challenging field. Developing coastal conservation projects whether they involve acquisition, easements, feasibility analysis, research and monitoring, design or implementation, requires high levels of technical expertise and the ability to pull together multiple partners into collaborative efforts. Significant time is required to develop relationships with landowners, other organizations, regulatory agencies, and funding partners and there are few funding sources to cover these up-front costs.

Funding from state or federal sources is becoming scarcer and the competition for these funds has increased significantly. As we have become more sophisticated in our conservation efforts so has the complexity in the application requirements in funding Requests for Proposals (The new State Water Resources Control Board Consolidated Grants Program and Integrated Regional Water Management Program requirements are a case in point). Especially for smaller and recently established organizations finding resources for the development of a competitive proposal is often not possible. Even for established organizations and local

governments the need for covering these costs was a high priority identified by the stakeholder surveys and expert input.

The need to cover up-front costs ties closely with another high priority need: Additional funding mechanisms that are not tied to State General Obligation Bond Funding. Two-thirds of the California legislature and a majority of voters are needed to approve the sale of General Obligation (GO) Bonds. These bonds are long-term loans that allow the State to pay for the costs of long-lived facilities over time. From 1972 to the present there has been $15 billion worth of bonds approved by voters for the environment (California Budget Project). California voters generally support bonds for the environment, especially parks and water.

Although GO Bonds are a successful way of funding coastal conservation projects there are some significant drawbacks to relying on bonds as the only funding source. GO Bond funds are generally restricted to implementation work (public works), and are specific both in type of projects covered and the timing and amount of funds available. GO Bonds do not provide funds for planning, organization support, building collaborative efforts, or conducting public education. The funds are available for a short period, and then a new bond must be drafted and passed by the voters.

The watersheds, coast, beaches, and ocean environment are part of the California's "green" infrastructure. Like any infrastructure these resources require protection, maintenance, and ongoing care to remain functional. There is a significant need for operation and maintenance for both public-lands (parks, preserves, wildlife areas), and lands under management by conservation organizations. In the past decade, while population growth on and visitation to the North Coast has grown. While we are "loving our coast to death", State General Funding for resource agencies has declined. State funding for coastal conservation should include long-term funding options. In addition, the North Coast needs to establish regional funding mechanisms such as an open space or special districts. The regional land trusts (Mendocino and North Coast Regional Land Trusts) would be a rational choice to lead such an effort

5.4 Development of New Data and Conservation Plans

Priority Needs

- Fill priority data gaps with accurate and up-to-date information. Especially for the marine environment; sediment and its impacts to near shore environment; marine fisheries habitats; and estuarine habitat functions for anadromous and marine fisheries.
- Site specific terrestrial and estuarine planning.
- Marine conservation planning on a regional scale.

Recommendations

6. Conduct a detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties
7. Map north coast marine habitats. Lobby to get DFG marine habitat mapping effort prioritized/expedited for the North Coast.
8. Increase research and monitoring to link changes in land use and runoff (especially sediment) to impacts on estuarine and near shore water quality and habitat.

   Example: Provide necessary field equipment to support ongoing research, monitoring, and implementation. Field equipment is currently needed for marine mammal surveys, and sediment monitoring.

9. Conduct regional marine conservation planning for the North Coast, building from The Nature Conservancy's Northern California Marine Ecoregional Assessment. This assessment is an excellent first step in identifying data gaps for marine and estuary systems.
10. Develop site specific terrestrial and estuarine plans. See Table 5, page 17, for detailed site information.

Discussion

Effective coastal conservation requires access to the best possible information. There are large gaps in basic data and information regarding marine and estuary ecosystems, and the land-to-sea ecotone in the North Coast region. **A detailed data gap analysis and GIS mapping of coastal Del Norte, Humboldt and Mendocino counties** would help to develop the necessary cohesive vision for development of a regional strategic marine conservation plan. This is especially important for management of existing and proposed marine protection areas/measures.

The region needs more support for ongoing research and development of new data to fill gaps in knowledge. For example **marine habitat mapping** has been completed or is occurring along sections of the south and central California coast, but has not been prioritized for the North Coast region.

The links between terrestrial and marine ecosystems have not been addressed in a focused, comprehensive manner. These linkages need to be more clearly identified and assessed. One significant linkage is the flow of freshwater, containing sediments and pollutants, through watersheds to the near shore marine environments. This issue may offer a tangible starting place for quantifying a terrestrial/marine ecosystem linkage and presents the opportunity to take a more ecosystem-based approach to conservation issues in these environments. The current Critical Coastal Areas program of the California Coastal Commission is a good start to addressing these issues.

The North Coast region has numerous land use changes occurring that have the potential for both positive (restoration) and negative impacts to coastal resources. **Monitoring and evaluating** these activities is necessary for informing adaptive management practices. Although many coastal projects, from restoration to sub-divisions, require monitoring, there is a lack of financial and technical support for monitoring.

Very little planning exists on a regional level for the protection, enhancement, and management of marine resources. The Nature Conservancy's Northern California Marine Ecoregional Assessment identifies areas for protection but does not prioritize those areas or identify mechanisms for their protection. An important next step would be the development of a **regional marine conservation plan** that prioritizes marine areas for protection and outlines a plan for implementation of management measures.

Important Environmental Parameters for Monitoring on the North Coast

- **Water quality** – including sediment and turbidity, stream flow, pH, pollution from septic tank leach fields, salinity, turbidity, oxygen, chlorophyll, temperature. Sediment sources.
- **Ocean water quality**
- **Biological (**birds/mammals/plants) for conservation easements; biological productivity; fish, aquatics; inverts; forest regrowth and regeneration
- **Marine** - PISCO (rocky intertidal/sand habitat using Marine protocol); Kelp bed health; trends in ocean temperature
- **Trend** – physical (LiDAR), biological, rainfall, hydrological, long-term environmental trends

5.5 Access to Existing Data and Planning Information

Priority Needs

- Knowledge of and access to existing data and information especially regarding marine resources and the link between land and sea.
- Improved access to and understanding of existing terrestrial and marine conservation plans.

Recommendations

11. Facilitate access to region specific information and spatial data for marine/coastal environment and conservation by developing either a centralized information system or a coordinated network of information systems.
12. Maximize communication and collaboration between groups that generate and manage regional data and GIS including Humboldt Bay HRCD, Seagrant, NOAA Fisheries, DFG Marine Fisheries, TNC, CICORE, Legacy the Landscape Connection, County Planning Departments, KRIS, CalFish, Central and Northern California Ocean Observation System (CENCOOS).
13. Provide for outreach and education regarding existing regional coastal conservation plans and how they should be implemented.

Discussion

Creation of either a **centralized or a coordinated network of information systems** that contain existing data for coastal and marine conservation is a high priority. The region needs **seamless coverage of the coast with comparable data sets** so patterns can be identified. Digital GIS based data has been developed by numerous entities, mostly for terrestrial areas, but it is still difficult to know what is available and how it can be accessed. The amount, type of, and format of existing data sets, studies, GIS layers and the like is not consistent across the region and is lacking for marine resources. The *Northern California Marine Ecoregional Assessment* (TNC, 2006) has made significant headway in compiling existing marine and estuary information and spatial data and provides a good foundation to build upon.

There are several existing systems, all in some stage of development including:

- Klamath Resource Information System (KRIS) that covers many watersheds in the region;
- California Cooperative Fish and Habitat Data Program (CalFish), that is state wide and salmonid focused;
- Information Center for the Environment (ICE), state wide and watershed focus;
- Center for Integrative Coastal Observation Research and Education (CICORE).

An important component to the development of either a centralized information system or a network of information systems is regular communications between organizations that generate useful data and information. Networking between organizations will require a person in a coordination role. In addition support for existing data hubs and individuals who are known to be good regional "data-miners" is important.

There are hundreds of terrestrial plans for the region, but most people working in coastal conservation are not familiar with the plans that exist or what they contain. There is a need for an ongoing system to catalogue, summarize, organize and query existing conservation plans, including an update of the most recent catalogue of plans/assessments for the region, The Conservation Fund's Conservation Prospects for

the North Coast. Another way to improve understanding of existing plans would be to convene a workshop of the main developers of current, significant conservation plans to determine common goals and prioritize regional actions. However, the most important planning need is to **ensure that the plans that already exist are implemented.**

5.6 Communication and Collaboration

Priority Needs:

- Improved communication and collaboration between conservation partners

Recommendations

14. Additional support for existing groups that bring together conservation partnerships and facilitate collaboration.
15. Determine the feasibility of creating a regional resource network or conservation framework that could bring together the following elements: collaborative body (representatives from stakeholder groups and agencies); means for public process; science advisory panel; communication body for interactions with state and federal programs; and ability to develop proposals for, accept and administer funds to support projects on a regional scale.

    Example: Convene a North Coast regional coastal conservation interagency task force, to meet every six months to 1) update all stakeholders on the status of coastal conservation planning and implementation projects throughout the region 2) explore opportunities for coordinating research, monitoring, data collection and exchange, communications to state programs and public outreach activities 3) collaborate in development of funding opportunities 4) provide representatives from state and federal programs a contact point for interaction with regional stakeholders and collaboratives. Current contact for development of the first such meeting is Susan Schlosser, UC Cooperative Extension Sea Grant, Eureka, CA.
16. Determine the feasibility of creating regional resource centers to provide support for small coastal conservation groups.

    Example: Tillamook Coastal Watershed Resource Center www.tcwrc.org, and the TREES Foundation.

    Example: Support coordination between the Bureau of Land Management, California Department of Fish and Game and California Department of Parks and Recreation for day-to-day management of the California Coastal National Monuments. A key element will be future establishment of "gateway communities" up and down the coast, involving areas, cities, and towns in helping to manage and interpret the monument.

Discussion

Coastal **conservation can be more effectively accomplished on a regional scale by linking efforts.** The majority of stakeholder groups desire improved communication and collaboration between current and potential conservation partners. To complete successful conservation projects requires weaving together a complex fabric of partners, funding sources, and permits, and detailed understanding diverse ecosystems. Each successful project involves numerous individuals and organizations with various talents and resources.

Establishing effective interpersonal relationships is one of the biggest challenges in coastal conservation efforts. Inter- and intra-agency and agency/NGO communications can be improved by simply talking to each other on a more regular basis. This can be intimidating, on both sides, and takes some courage to

initiate discussions and allow for the free flow of ideas. Improved access to trainings and workshops regarding effective communications is needed.

Often it is not initially clear how partners can work together, and developing collaborative projects takes the attention of a dedicated person who has resources and abilities to tie efforts together. This is where watershed coordinators, Resource Conservation Districts (RCD's), land trusts, UC Cooperative Extension, community action groups, and innovative agency staff play a vital role. Funding for organizing meetings, facilitating communications, and bringing together collaborative efforts is scarce.

There are some excellent existing resource planning and conservation groups in the region that function as hubs of a regional network (Mendocino and Northcoast Regional Land Trusts, RCAA Natural Resources Services, Pacific Coast Joint Venture, Smith River Alliance, Rural Human Services, U.C. Cooperative Extension Sea Grant, Mattole Restoration Council, the local Resource Conservation Districts, Northcoast Environmental Center). These existing efforts can be seen as models for improving regional communications and coordination. Most of them have a local or countywide focus. Of these there are only a few that consider the marine and terrestrial environment. There are only a few groups that regularly bring together conservation partners and cover the entire region (Salmonid Restoration Federation, Pacific Marine Conservation Council, The Nature Conservancy), and only two that include some consideration of both terrestrial and the marine environment, the California Pacific Coast Joint Venture (PCJV) for birds, and The Nature Conservancy. In addition, staff from the State Coastal Conservancy, Department of Fish and Game and the California Coastal Commission often act as a conduit for sharing information and pulling together collaborative projects throughout the region.

The northern California region does not have a functioning collaborative group that could serve multiple roles as suggested in Recommendation #15. It does however have numerous smaller groups and collaboratives that could be part of a regional network. There are positive and negative aspects to establishment of a regional conservation framework/collaborative group, especially one that would have multiple roles. The Planning and Advisory Team felt that the potential positives warranted further investigation of what such a group could do, how it could be managed, and what impacts it would have on existing groups and efforts.

5.7 Incentives

Priority Needs:

- Increased number and utilization of incentives and decrease in the number of disincentives for resources users and managers to conduct coastal conservation and use Best Management Practices

Recommendations

17. Create incentives for the use of best management practices by marine and terrestrial resources users.

    Example: PMCC's Spatial Community Outreach Project.

    Example: Research and evaluate the impacts of the application of fishery management tools such as the groundfish trawl buyback and closed areas on the shelf and slope to impacted communities.

18. Develop strategies for working with private landowners.

    Example: Analysis and development of management practices, incentive programs, and/or removal of disincentives that can increase the economic viability and desirability for landowners to enhance coastal resources on their private lands (e.g., The Aleutian Goose Working Group)

Discussion

Working landscapes play a key role in existing and future coastal conservation on the North Coast. In order to preserve the integrity and function of coastal environments it will be necessary to work with private landowners to develop best management practices for working landscapes and provide incentives for coastal conservation. Current incentive programs include those provided by the Natural Resource Conservation Service (Environmental Quality Incentives Program, Wildlife Habitat Incentives Program, Conservation Reserve Program), payment for establishing conservation easements, Williamson Act, and Non-Industrial, and Timber Management Plans. There are several groups on the North Coast that are working to develop additional incentive programs such as the Buckeye Conservancy's Forest Project. Landowners could benefit from better access to reliable up-to-date information for conducting conservation projects on their property such as the correct incentive programs for them, safe harbor agreements, and the permitting requirements.

A regional strategy for working with private landowner on conservation projects has not been developed. This should include establishing criteria for determining which landowners to outreach to (size of holdings, type of habitat, level of threat etc.). However, the two regional land trusts, Mendocino Land Trust and the Northcoast Regional Land Trust have developed conservation strategies that include strong working lands components.

In the marine environment developing Best Management Practices (BMPs) with fishermen and providing incentives for their use is equally as important. Information on community-specific impacts of management measures is typically lacking in the fishery management process. Management decisions would be better informed with annual updates on the impacts of fisheries management to communities. A methodology was developed by PMCC to collect input from fishermen regarding BMPs, improving fishery management, and developing incentives. (Spatial Community Outreach Project (SCOOP) www.pmcc.org/News/Final%20report%20SCOOP.pdf)

5.8 Creating Broad Support for North Coast Conservation

Priority Needs:

- Develop a sense of stewardship in general population and state decision makers for Northern California's coastal resources.

Recommendation:

19. Support for and development of programs that connect people to place.

    Examples: Mendocino Whale Festival, Friends of the Dunes Bay to Dunes and Docent Programs, Aleutian Goose Festival, Sanctuary Forest Docent Program, Salmon in the Classroom, BLM California Coastal National Monument, CCC Critical Coastal Areas Program

Discussion

Whether it is marine, coastal or terrestrial environment effective protection, conservation and enhancement requires an involved citizenry, and educated decision makers. Because the population base in on the North Coast is relatively small, and decisions concerning the region are often made by voters in large population centers there is a need to clearly emphasize the unique value of the North Coast's natural resources, and the threats they are under, in population centers and with state decision makers. This is also true on a national and global scale as significant threats to coastal resources do not arise locally such as climate change, off-shore oil drilling, water diversions, and changes in state and federal regulations (Clean Water Act, fisheries management, Endangered Species Act etc).

For people to support coastal conservation they must be able to connect to the land and sea in an emotional or spiritual way. People change behavior, fight for special places, and support conservation when they have a spiritual connection with place. There are numerous community efforts in the region that have successfully helped to develop sense of place by utilizing art, music, theatre, literature, spiritual gatherings and the like. The most obvious spiritual connection to the land and sea is that of the indigenous people of the North Coast. Talking with the tribes about the potentials for connecting people to place is important.

Development of a program to connect people to place in order for the general public land owners, land and marine resource managers to develop a sense of stewardship for coastal resources and support coastal conservation (e.g. the numerous campaigns and education programs regarding the California Grey Whale has created a desire in the main stream population to protect this creature and its habitat). The program should include assistance with the development of interpretive materials and displays (e.g. RCAA's Humboldt Bay Interpretive Signing Manual).

More in-depth analysis of economic and sociological parameters that influence land use decisions, community support for coastal conservation, resource allocations, would help conservation organizations to be more effective in their work.

Appendix A
Technical Advisory Team

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SYNTHESIS OF EXISTING MARINE PLANNING DOCUMENTS

FINAL 06/26/06

The goal of the Northern California Coastal Conservation Needs Assessment ("Needs Assessment") is to assess and document the specific needs, including capacity building, of conservation organizations for regional strategic coastal (marine and terrestrial) conservation planning and implementation in Mendocino, Humboldt, and Del Norte Counties. This document represents a review and summary of the existing marine coastal conservation planning efforts relevant to the area of interest for the Northern California Coastal Conservation Needs Assessment.

The plans are separated into four categories, National, West Coast, California, and Regional based on their scale of focus. We attempted to synthesize existing plans from a regional perspective and identify and assess (1) informational, technical and other needs and constraints that could limit development of a regional strategic coastal conservation plan and implementation of coastal conservation projects and (2) knowledge, data, and resource gaps that would need to be filled in order to develop a regional strategic coastal conservation plan and implement coastal conservation projects.

Contact information and a summary of the goals and recommendations are presented for each of the plans. More detail information exists for each document than could be represented here. The full plans can be accessed through the websites identified below.

I. National Scale Plans

1. PLANNING RESOURCE: Pew Commission on Ocean Policy report: America's Living Oceans, Charting a Course for Sea Change.

ORGANIZATION: Pew Commission on Ocean Policy
WEB ADDRESS: http://www.pewoceans.org/
SCALE: National
LOCATION: U.S.
DATE: May 2003
CONTACT INFORMATION: Pew Oceans Commission
2101 Wilson Boulevard, Suite 550 Arlington, VA

DESCRIPTION AND RECOMMENDATIONS:
The fundamental conclusion of the Pew Oceans Commission is that this nation needs to ensure healthy, productive, and resilient marine ecosystems for present and future generations. We must redefine our relationship with the ocean to reflect an understanding of the land-sea connection and organize institutions and forums capable of managing on an ecosystem basis. Decisions should be founded upon the best available science and flow from processes that are equitable, transparent, and collaborative. To embrace these reforms and achieve our goal, the nation must realize five priority objectives:

1. Declare a principled, unified national ocean policy based on protecting ecosystem health and requiring sustainable use of ocean resources.
2. Encourage comprehensive and coordinated governance of ocean resources and uses at scales appropriate to the problems to be solved.
3. Restructure fishery management institutions and reorient fisheries policy to protect and sustain the ecosystems on which our fisheries depend.
4. Protect important habitat and manage coastal development to minimize habitat damage and water quality impairment.
5. Control sources of pollution, particularly nutrients that are harming marine ecosystems.

The Commission recommends the following actions to achieve these objectives.
Governance for Sustainable Seas:

- Enact a National Ocean Policy Act to protect, maintain, and restore the health, integrity, resilience, and productivity of our oceans.
- Establish regional ocean ecosystem councils to develop and implement enforceable regional ocean governance plans.
- Establish a national system of fully protected marine reserves.
- Establish an independent national oceans agency.
- Establish a permanent federal interagency oceans council.

Restoring America's Fisheries:

- Redefine the principal objective of American marine fishery policy to protect marine ecosystems.
- Separate conservation and allocation decisions.

- Implement ecosystem-based planning and marine zoning.
- Regulate the use of fishing gear that is destructive to marine habitats.
- Require bycatch monitoring and management plans as a condition of fishing.
- Require comprehensive access and allocation planning as a condition of fishing.
- Establish a permanent fishery conservation and management trust fund.

Preserving Our Coasts:

- Develop an action plan to address nonpoint source pollution and protect water quality on a watershed basis.
- Identify and protect from development habitat critical for the functioning of coastal ecosystems.
- Institute effective mechanisms at all levels of government to manage development and minimize its impact on coastal ecosystems.
- Redirect government programs and subsidies away from harmful coastal development and toward beneficial activities, including restoration.

Cleaning Coastal Waters:

- Revise, strengthen, and expand pollution laws to focus on nonpoint source pollution.
- Address unabated point sources of pollution, such as concentrated animal feeding operations and cruise ships.
- Create a flexible framework to address emerging and nontraditional sources of pollution, such as invasive species and noise.
- Strengthen control over toxic pollution.

Guiding Sustainable Marine Aquaculture:

- Implement a new national marine aquaculture policy based on sound conservation principles and standards.
- Set a standard, and provide international leadership, for ecologically sound marine aquaculture practices.

Science, Education, and Funding:

- Develop and implement a comprehensive national ocean research and monitoring strategy.
- Double funding for basic ocean science and research.
- Improve the use of existing scientific information by creating a mechanism or institution that regularly provides independent scientific oversight of ocean and coastal management.
- Broaden ocean education and awareness through a commitment to teach and learn about our oceans, at all levels of society.

2. PLANNING RESOURCE: U.S. Commission on Ocean Policy report: An Ocean Blueprint for the 21st Century.

ORGANIZATION: U.S. Commission on Ocean Policy
WEB ADDRESS: http://www.oceancommission.gov/
SCALE: National
LOCATION: U.S.
DATE: September, 2004
CONTACT INFORMATION: U.S. Commission on Ocean Policy, Washington, D.C.

DESCRIPTION AND RECOMMENDATIONS: On September 20, 2004, the U.S. Commission on Ocean Policy fulfilled its mandate to submit recommendations for a coordinated and comprehensive national ocean policy to the President and Congress. The Commission's final report, "An Ocean Blueprint for the 21st Century," contains 212 recommendations addressing all aspects of ocean and coastal policy. The 16 members of the Commission call on the President and Congress to take decisive, immediate action to carry out these recommendations, which will halt the steady decline of our nation's oceans and coasts.

The following key recommendations are meant to provide the foundation for a comprehensive national ocean policy that will lead to significant improvements in ocean and coastal management:

Sound Science for Wise Decisions:

- Double the nation's investment in ocean research, launch a new area of ocean exploration, and create the advanced technologies and modern infrastructure needed to support them.
- Implement the national integrated Ocean Observing System and a national monitoring network.

Education – A Foundation for the Future:

- Improve ocean-related education through coordinated and effective formal and informal efforts

Specific Management Challenges:

- Strengthen coastal and watershed management and the links between them.
- Set measurable goals for reducing water pollution, particularly from nonpoint sources, and strengthen incentives, technical assistance, enforcement, and other management tools to achieve those goals.
- Reform fisheries management by separating assessment and allocation, improving the Regional Fishery Management Council system, and exploring the uses of dedicated access privileges.
- Accede to the United Nations Convention on the Law of the Sea to remain fully engaged on the international level.

II. West Coast Scale Plans

3. PLANNING RESOURCE: Pacific Coast Groundfish Essential Fish Habitat Final Environmental Impact Statement

ORGANIZATION: Pacific Fishery Management Council / NOAA Fisheries
WEB ADDRESS: http://www.nwr.noaa.gov/Groundfish-Halibut/Groundfish-Fishery-Management/NEPA-Documents/EFH-Final-EIS.cfm
SCALE: Regional (West Coast)
LOCATION: Marine waters of California, Oregon, and Washington.
DATE: December, 2005
CONTACT INFORMATION: Mr. D. Robert Lohn Regional Administrator Telephone: (206) 526-6150 Fax: (206) 526-6426 National Marine Fisheries Service Northwest Region 7600 Sand Point Way NE, BIN C15700 Seattle, WA 98115-0070
Dr. Donald O. McIsaac Executive Director Telephone: (503) 820-2280
Pacific Fishery Management Council 7700 NE Ambassador Place, Suite 200
Portland, OR 97220

DESCRIPTION AND RECOMMENDATIONS: This environmental impact statement (EIS) evaluates the effects of a comprehensive strategy to conserve and enhance essential fish habitat (EFH) for fish managed under the *Pacific Coast Groundfish Fishery Management Plan* (FMP). The comprehensive strategy to conserve EFH, including its identification and the implementation of measures to minimize, to the extent practicable, adverse impacts to EFH from fishing, must be consistent with provisions in the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations.

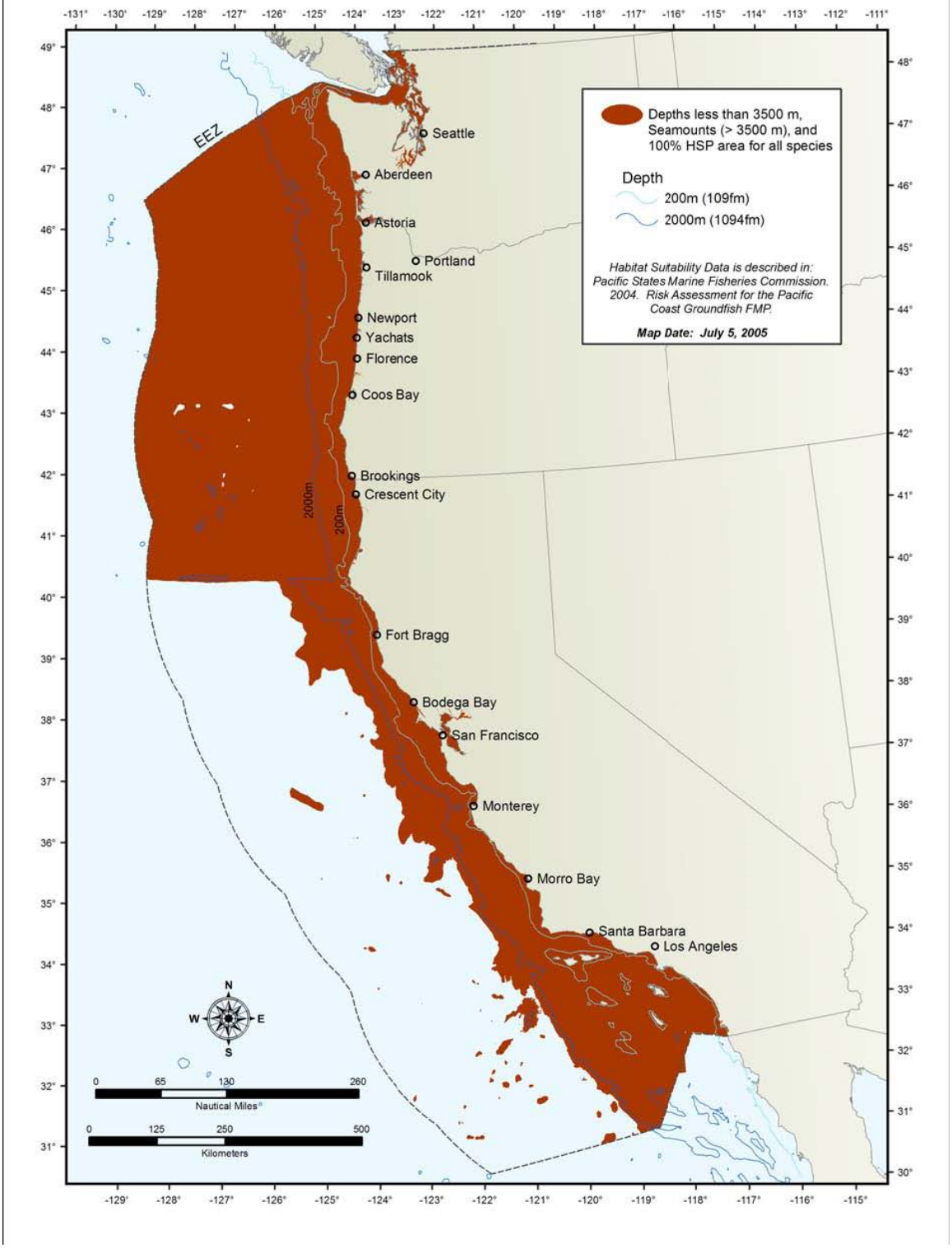
The overall extent of groundfish EFH for all fishery management unit (FMU) species is identified as all waters and substrate within the following areas:

- Depths less than or equal to 3,500 m (1,914 fathoms) to mean higher high water leve (MHHW) or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 ppt during the period of average annual low flow.
- Seamounts in depths greater than 3,500 m as mapped in the EFH assessment GIS.
- Areas designated as Habitat Areas of Particular Concern (HAPCs) not already identified by the above criteria.

This EFH identification is precautionary because it is based on the currently known maximum depth distribution of all life stages of FMU species. This precautionary approach is taken because uncertainty still exists about the relative value of different habitats to individual groundfish species/life stages, and thus the actual extent of groundfish EFH. For example, there were insufficient data to derive habitat suitability probability (HSP) values for all species/life stages. Furthermore, the data used to determine HSP values is subject to continued refinement. While recognizing these limitations, the 100% HSP area, all of which occurs in depths less than 3,500 m, is identified as a part of groundfish EFH, recognizing that the best scientific information demonstrates this area is particularly suitable groundfish habitat. While

precautionary, groundfish EFH still constitutes an area considerably smaller than the entire West Coast EEZ.

The map below shows the extent of this EFH identification.


Depths less than 3500 m, Seamounts (> 3500 m), and 100% HSP area for all species
Depth
200m (109fm)
2000m (1094fm)
Habitat Suitability Data is described in: Pacific States Marine Fisheries Commission. 2004. Risk Assessment for the Pacific Coast Groundfish FMP.
Map Date: July 5, 2005
EEZ
Seattle
Aberdeen
Astoria
Portland
Tillamook
Newport
Yachats
Florence
Coos Bay
Brookings
Crescent City
Fort Bragg
Bodega Bay
San Francisco
Monterey
Morro Bay
Santa Barbara
Los Angeles
2000m
200m
N
W
E
S
0 65 130 260
Nautical Miles
0 125 250 500
Kilometers

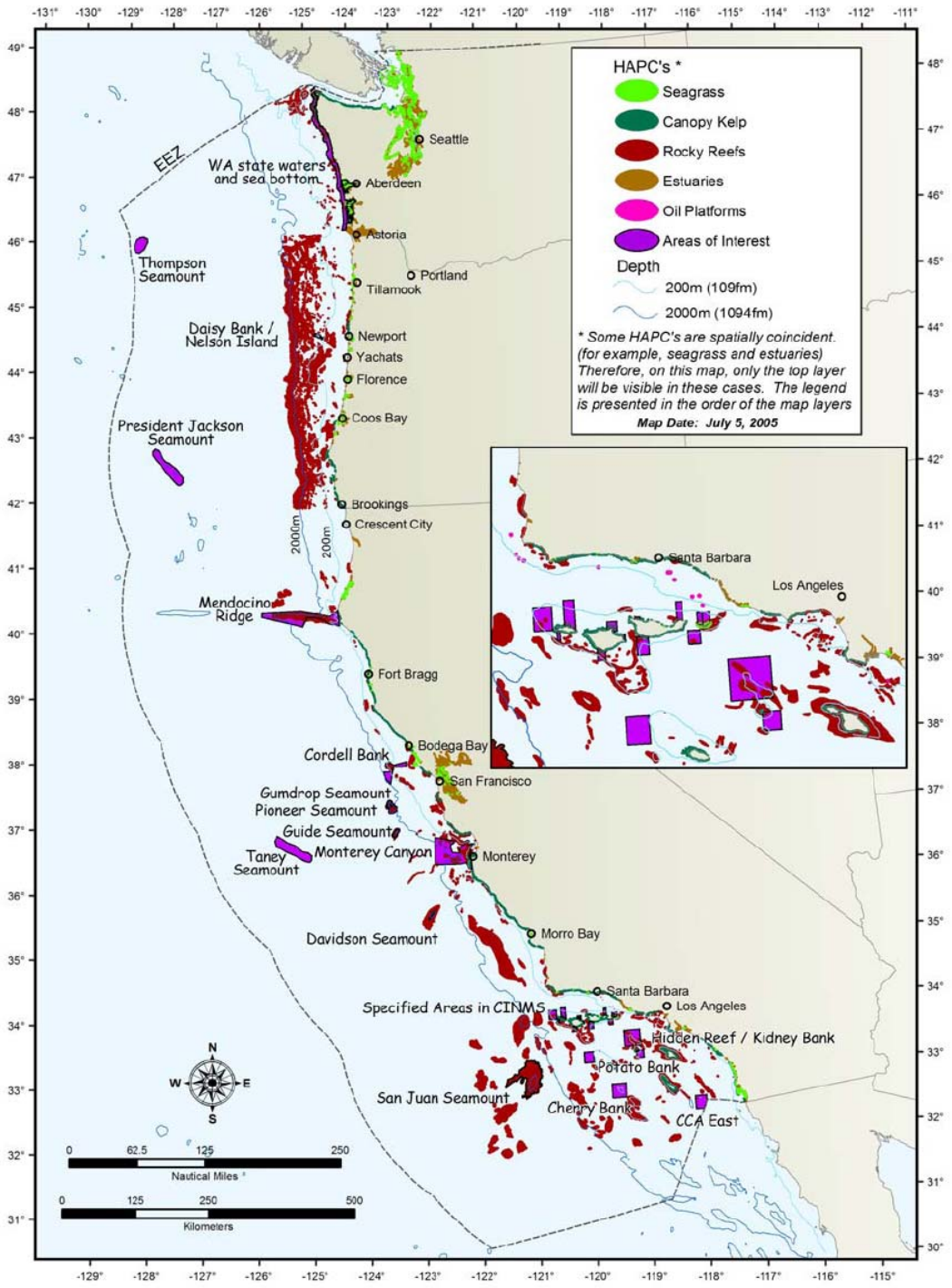


Figure 7-2. Groundfish HAPC

EFH guidelines published in Federal regulations identify habitat areas of particular concern as types or areas of habitat within EFH that are identified based on one or more of the following considerations:

• The importance of the ecological function provided by the habitat.

• The extent to which the habitat is sensitive to human-induced environmental degradation.
• Whether, and to what extent, development activities are or will be stressing the habitat type.
• The rarity of the habitat type.

HAPC Designations:

Estuaries

Defining characteristics: The inland extent of the estuary HAPC is defined as MHHW, or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 ppt during the period of average annual low flow. The seaward extent is an imaginary line closing the mouth of a river, bay, or sound; and to the seaward limit of wetland emergents, shrubs, or trees occurring beyond the lines closing rivers, bays, or sounds. This HAPC also includes those estuary-influenced offshore areas of continuously diluted seawater.

Canopy Kelp

Of the habitats associated with the rocky substrate on the continental shelf, kelp forests are of primary importance to the ecosystem and serve as important groundfish habitat. Kelp forest communities are found relatively close to shore along the open coast.

Seagrass

Defining characteristics: The seagrass HAPC includes those waters, substrate, and other biogenic features associated with eelgrass species (*Zostera* spp.), widgeongrass (*Ruppia maritima*), or surfgrass (*Phyllospadix* spp.).

Rocky Reefs

Defining characteristics: The rocky reefs HAPC includes those waters, substrates and other biogenic features associated with hard substrate (bedrock, boulders, cobble, gravel, etc.) to MHHW. A first approximation of its extent is provided by the substrate data in the groundfish EFH assessment GIS. However, at finer scales, through direct observation, it may be possible to further distinguish between hard and soft substrate in order to define the extent of this HAPC.

Areas of Interest

Areas of interest are discrete areas that are of special interest due to their unique geological and ecological characteristics. The following areas of interest are designated HAPCs:
• Off of California: all seamounts, including Gumdrop Seamount, Pioneer Seamount, Guide Seamount, Taney Seamount, Davidson Seamount, and San Juan Seamount; Mendocino Ridge; Cordell Bank; Monterey Canyon; specific areas in the Federal waters of the CINMS; specific areas of the Cowcod Conservation Area.

III. California Scale Plans

4. PLANNING RESOURCE: Protecting Our Ocean - California's Action Strategy

ORGANIZATION: Prepared by the California Resources Agency and California Environmental Protection Agency
WEB ADDRESS: http://resources.ca.gov/ocean/Cal_Ocean_Action_Strategy.pdf
SCALE: Statewide
LOCATION: California
DATE: September 2004
CONTACT INFORMATION: California Resources Agency and California Environmental Protection Agency

DESCRIPTION AND RECOMMENDATIONS:
The intent of this Action Plan is to recommend initial actions that the state should pursue to maintain its nationally recognized leadership role in managing and protecting ocean and coastal resources.
The Action Plan seeks to:
• Increase the abundance and diversity of aquatic life in California's ocean, bays, estuaries, and coastal wetlands;
• Make the water in those bodies cleaner;
• Provide a marine and estuarine environment that Californians can productively use and safely enjoy; and
• Support ocean dependent economic activities.

Immediate and ongoing actions:
• Sign the California Ocean Policy Act (COPA) into Law.
• Demand Improvements in National Ocean Policy.
• Eliminate Adverse Impacts of Offshore Oil and Gas Development.
• Support the California Coastal Commission and Coastal Management.
• Implement the Marine Life Protection Act Initiative.
• Launch the Coastal Currents Monitoring System (Ocean Observation Systems).
• Complete the California Coastal Sediment Management Plan. The
• Develop an Ocean and Coastal Stewardship Campaign.
• Identify, Assess, and Enforce Existing Laws.
• Develop a Long-Term Funding Strategy for Ocean and Coastal Protection and Management.
• Continue Support for the Clean Beaches Initiative.

Comprehensive and long-term actions:

A. GOVERNANCE
Action 1: *The Schwarzenegger Administration will call on the President of the United States and the Council of Environmental Quality to support the major provisions of the final report of the U.S. Commission on Ocean Policy, and other national ocean and coastal recommendations from the Pew Ocean Commission report or other sources, that are acceptable to California.*

Action 2: *Continue California's ocean and coastal leadership role by signing the California Ocean Protection Act (SB 1319) into law to establish a cabinet-level California Ocean Council with a mission to help ensure comprehensive and coordinated management, conservation, and enhancement of California's ocean and coastal resources for their intrinsic value and for the benefit of current and future generations.*

B. ECONOMICS AND FUNDING

Economics and Funding Analysis

There is no accounting system in place in the United States or in California to regularly assess the economic benefits derived from the ocean and coast. In addition, there is no comprehensive evaluation of the levels of investment in California to fund ocean and coastal management and protection programs.

Action 3: *Finalize, distribute, and make use of the California portion of the National Ocean Economics Project (California's Ocean Economy) to help inform decision makers and members of the public about the economic benefits derived from the ocean and the coast.*

C. RESEARCH, EDUCATION AND TECHNOLOGY DEVELOPMENT

Research, Education, and Technology Development Analysis

Government, academia, industry, and the non-governmental community need to develop a strategy to identify and pursue the highest priority research and outreach objectives to assist ocean and coastal management needs.

Action 4: *Develop a state-wide ocean and coastal research and outreach strategy with clearly stated priorities for California.*

Action 5: *Ensure that ocean and coastal education is included in the environmental principles and concepts being developed pursuant to the implementation of the Education and the Environment Initiative (Pavley, Chapter 665, Statutes of 2003 - AB 1548).*

Action 6: *Form collaborative partnerships with not only those providing K-12 and collegiate formal education, but also with institutions, organizations, and governmental agencies providing informal education opportunities for pre-schoolers to senior citizens, including the underserved minorities.*

Action 7: *Launch an ocean and coastal stewardship media campaign by working with members of government, academia, industry, and non-governmental organizations.*

Action 8: *Develop a Coastal Ocean Observation Strategic Plan (Strategic Plan) to guide the allocation of the state's $21 million investment in the Ocean Currents Monitoring System and its integration with all existing and future observing and monitoring systems.*

Action 9: *Revitalize the California Ocean and Coastal Environmental Access Network (CalOcean) on the California Resources Agency Website to provide access to marine data sets, geographic information systems, electronic documents, information regarding organizations, and marine and coastal news.*

D. OCEAN AND COASTAL STEWARDSHIP

Ocean and Coastal Stewardship Analysis

The recommendations of the U.S. Commission on Ocean Policy, and the ocean and coastal protection and management needs of the State of California, make a compelling case for ecosystem management approaches.

Action 10: *Increase efforts to pursue, support, implement, and establish long-term funding for coordinated ecosystem management approaches at the federal, state, and local levels to guide and improve the stewardship of ocean and coastal resources.*
Action 11: *Restructure, focus, and strengthen the "California Watershed Management Memorandum of Understanding (MOU)" to identify priority watersheds for resource protection and use, fishery recovery, and water quality, and improve delivery of state technical and financial assistance to impaired coastal watersheds.*
Action 12: *Integrate coastal water quality programs to improve their efficiency and effectiveness in cleaning up coastal watersheds, estuaries, bays, beaches, and near-shore waters.*
Action 13: *Identify and prioritize issues that may benefit from additional coordination by the California Ocean Council.*

5. PLANNING RESOURCE: California Coastal and Ocean Science Needs Assessment

ORGANIZATION: The California Ocean Science Trust, Prepared by: Brock Bernstein, Ojai, California
WEB ADDRESS: http://www.calost.org/reports/Truststrategyfinaldraft29APRIL05.pdf
SCALE: Statewide
LOCATION: California
DATE: April 29, 2005
CONTACT INFORMATION: Rudy Murillo, SIO, rpmurillo@ucsd.edu (619.944.9763).

DESCRIPTION AND RECOMMENDATIONS:
This document describes the California Ocean Sciences Trust's approach to meeting its mission. It provides a strategic framework that:

- Summarizes the broad scientific information and technology needs of the State with respect to the ocean and its management.
- Describes the Trust's role in focusing the State's scientific resources on these needs.
- Identifies specific issue areas and opportunities that could serve as useful starting points for the Trust's efforts.

The specific areas the Trust proposes to target are the following:

- Fisheries science and management
- Water and sediment quality
- Ecosystem assessment and management
- Invasive species
- Coastal erosion and beach management.

Fisheries science and management
Stock assessment
Stock assessment is the basic set of analytical tools used to convert raw estimates of individual species' abundance and life history parameters (e.g., reproduction and mortality rates) into explicit management decisions about how much fish can be caught and where and when it can be caught. These analytical tools have been used for decades and continue to be improved over time. However, they also have widely acknowledged limitations, primary among them:

- Simplifying assumptions (e.g., spatial heterogeneity) that do not reflect reality and constrain our ability to manage on smaller time and space scales and to apply new approaches
- A species-by-species approach that does not account for food chain and other complex interactions
- Insufficient data, both from fisheries and from fishery- independent studies, needed for accurate stock assessment, including on unfished biomass, total mortality, bycatch and discards, and the spatial and temporal distribution of effort and removals
- Inadequate mechanisms for gathering and using fishermen's knowledge about habitats and stock distribution and behavior.

Addressing these limitations will require a combination of well-designed data gathering efforts, development of improved modeling and analysis tools, and adjustments to existing stock assessment approaches in order to effectively use this new information.

Role of ocean climate
Filling this knowledge gap will require more research on the linked physical and biological oceanography of the eastern Pacific and the California Current, including data mining of historical fishery records. In addition, it will require the ability, perhaps through the use of marine reserves as control areas, to track changes in the natural ecological background independent of human impacts.

Monitoring and feedback
The fishery management system's continued movement toward broader ecosystem and multispecies approaches, the use of spatial management (marine reserves), and the targeted protection of essential habitat will require greater and more systematically collected data.

The socioeconomic impact of fisheries management policies is an important criterion in deciding among alternative management policies. The widespread lack of adequate socioeconomic data severely hampers the development of effective new policies.

Water and sediment quality
Assessment and modeling
Areas impacted by multiple sources (e.g., San Francisco Bay, Newport Bay, Santa Monica Bay) must be managed as coherent units, taking account of the processes (physical, chemical, and biological) that transform, transport, and store pollutants. Similarly, diffuse sources such as urban runoff and stormwater do not fit neatly into the point-source paradigm. Their management requires new watershed-scale models that can be much more complex than the models traditionally used for managing point sources.
Regional Water Quality Control Boards with jurisdiction in the coastal zone are implementing a large number of Total Maximum Daily Load (TMDL) programs to protect and/or restore water and sediment quality. These efforts are hampered both by inadequate data and modeling and analysis tools that are ill suited to these coastal and nearshore environments. Equally problematic is the relatively poor understanding of the effectiveness of structural BMPs (best management practices) in a variety of real-world situations. Paradoxically, despite the large amount of permit monitoring data that have been collected, only a portion of it is suited for model development and validation and/or BMP evaluation. This lack of data complicates efforts to improve the analytic basis for TMDLs and their implementation strategies.

Inputs of water, sediment, and pollutants from coastal watersheds also affect the ocean environment, and changes to watershed landscape features in turn affect the size and nature of these inputs. However, because the terrestrial and marine systems have until now been regulated and managed separately, there are important gaps in our knowledge about the actual nature and magnitude of such effects. We have not yet rigorously linked changes in land use and runoff to impacts on nearshore water quality and habitat. In addition, recent studies have shown that stormwater plumes can extend for miles along the coast and are toxic to test organisms, but the consequences of such processes are still unknown. This highlights the need for more

sophisticated assessment tools that can make more reliable connections between observed levels of pollutants and actual ecological impacts. The State Water Resources Control Board's effort to develop sediment quality objectives for bays and estuaries and the Department of Fish and Game's development of bioassessment tools for freshwater creeks and streams are both on the leading edge of research to link pollutant levels to ecological impacts. One of the issues of highest concern, both along the coast and in coastal watersheds, is the potential human health impacts of contamination by pathogens.

The management of these and other related issues will be facilitated by the expansion of regional monitoring systems that provide integrated information about larger portions of the ocean and coastal zone. Significant progress has been made in this regard with the periodic Bight monitoring programs managed by SCCWRP and the implementation of the California Ocean Observing System (COOS). More remains to be done, however, in terms of filling gaps in these and other data gathering networks, providing accessible data management and analysis tools, and linking such regional efforts more closely to management objectives.

Management approaches

The management system must focus more on regional scales, incorporating improving knowledge about regional processes and impacts, especially those that cross the coastal zone boundary. This will require adjusting the existing regulatory framework, as well as the monitoring and assessment efforts that support it. Managing on larger scales, and taking account of interrelated processes, will require improved decision support tools.

Ecosystem assessment and management

There is a significant need for efforts to adapt existing management frameworks to ecosystem concepts, as well as to larger spatial and longer temporal scales. This would require a greater focus on physical/biological linkages and system processes, rather than on individual resource species, as well as an improved ability to identify and track long-term trends in resources. Such trend monitoring would be strengthened if it buttressed against the danger of shifting baselines by more quantitative descriptions of prior historical conditions. Successful use of ecosystem management approaches will also depend on the development and application of assessment tools that organize, analyze, and display large amounts of varied data, yet are straightforward enough to support management decision making.

Invasive species

Invasions of exotic species have impacted a number of coastal habitats and/or ecosystems and future increases in vessel traffic due to global trade will only intensify the risk of future invasions. While the general scope of the problem is understood, there are large gaps in knowledge that severely hamper efforts to control this problem. These fall into two categories. The first is related to the monitoring needed to document the distribution of invasive species, identify new invasions soon enough to provide some chance of responding effectively, and prioritize potential routes of invasion for surveillance. The second is related to the ability to respond to invasions when they occur, conduct risk analyses to help predict which habitats are most susceptible to invasion, and implement management policies to reduce the risk of future invasions.

Monitoring and surveillance
The first step in developing an effective management strategy to deal with invasive species is to understand the nature, magnitude, and extent of the problem. While some efforts are underway in California to highlight the importance of this problem and to conduct some surveys, there is no coordinated statewide program for periodic monitoring.

In addition to monitoring the degree to which invasive species have become established along California's coast, it is important to conduct surveillance of the numerous potential entry points for invasives, including ballast water, hull fouling, aquaculture, and sales of aquarium organisms.

Response and management
Current legislation calls for the California Department of Fish and Game to establish a taskforce on marine invasives, modeled after the existing surveillance and response network for terrestrial invasives. It may be worthwhile to establish a mechanism for periodic ecological and economic risk assessments that could then be used to create and/or adapt science-based management policies. In addition, some invasives are such a large threat and/or become established so rapidly that it is necessary to respond rapidly, something that management and regulatory systems are not always capable of. In this context, the recent experience of the ad hoc Southern California Caulerpa Action Team (SCCAT) provides a useful example of an extremely rapid response that resulted from the collaborative actions of a number of scientists and resource and regulatory agencies. Despite its success, however, it represents only a single, relatively unique, instance rather than the result of an established institutional framework.

Coastal erosion and beach management
Coastline erosion, beach maintenance and restoration, and the understanding and management of sediment budgets at larger, regional scales are statewide issues. The economic stakes involved in the protection of coastal property and the maintenance of beaches for recreational use are huge.

Monitoring and assessment
As for several of the other issue areas, coastal erosion and beach management are evolving from a primary focus on individual beaches or projects to approaches that better integrate across larger spatial and temporal scales. This highlights the needs for better understanding of sediment and coastal dynamics, as well for a range of improved monitoring, modeling, and assessment tools. Improved modeling and assessment tools are also needed in order to make effective use of more systematic and integrated monitoring data.

Management approaches
At the project scale, there is a need for the development and application of improved longer-term cost-benefit models of beach nourishment projects that include the full range of biological, economic, and social effects. Developing such broadly-based models will depend in part on better understanding of the ecosystem impacts of such projects and will provide a framework for evaluating the benefits of taking ecosystem impacts into greater account during the project design phase.

At regional scales, research, monitoring, and management should be expanded where possible to the scale of littoral cells, based on the knowledge that the larger projects are, relative to the scale

of the littoral cell, the more effective they are likely to be. In addition, project and coastal planning can be better integrated with the management of coastal watersheds. Such planning should expand to include assessments of the impacts of upstream features such as debris basins and channelization on sediment budgets. On the broadest and longest-term management scales, the State should consider its overall policy toward beach erosion, especially in light of the fact that continued sea level rise may accelerate beach erosion.

Crosscutting needs

Networks of marine protected areas (MPAs) have been proposed as a way to protect key habitats, manage fishing effort, and help rebuild at-risk stocks. Proposed network designs have been based on ocean current patterns, the distribution of different habitat types, and the population dynamics of key species. MPA networks, however, may also have unintended consequences on coastal communities and infrastructure. Maintaining an adequate supply of sand to beaches is a significant problem for jurisdictions attempting to prevent damage to coastal structures and sustain valuable recreational resources. The vast majority of sand on California's beaches has historically been transported from inland areas to the coastline by natural erosion processes and stormwater flows that mobilize the resulting sediment. This sediment flow has been impeded by infrastructure built during the last century to prevent flooding, store surface water for agricultural and urban uses, recharge groundwater aquifers, and retard sedimentation in bays and harbors. In addition, more recent regulations focused on urban runoff have fostered widespread actions to prevent the escape of sediment from construction sites and numerous other potential sources. These examples, and others, represent instances in which the combination of single-issue approaches to problems ends up working at cross purposes to each other. Resolving such problems demands comprehensive assessment approaches that integrate disparate kinds of knowledge and enable the examination of more complex scenarios and tradeoffs.

6. PLANNING RESOURCE: California Ocean and Coastal Information, Research, and Outreach Needs Workshop Final Summary Report

ORGANIZATION: Ocean Protection Council
WEB ADDRESS:
http://resources.ca.gov/copc/3-21-05_meeting/research_work_program.pdf
SCALE: Statewide
LOCATION: California
DATE: March 2005
CONTACT INFORMATION: California Ocean Protection Council Leah Akins
Ocean and Coastal Policy Analyst (916) 653-9416 email: leah.akins@resources.ca.gov

DESCRIPTION AND RECOMMENDATIONS:
The goal of the strategy is to improve the protection of California's ocean and coastal resources by identifying the most critical information, research, and outreach needs and developing an implementation plan to harness the efforts of government, academia, the private sector, and the public to fill these needs.
Objectives

- Identify the most critical information, research, and outreach needs to better manage California's ocean and coastal resources
- Develop an implementation plan to harness the efforts of government, academia, the private sector, and the public to fill these needs
- Develop immediate actions that can be achieved with enhanced collaboration, coordination, and with modifications to existing infrastructure
- Develop long-term actions that may require more substantial changes to existing infrastructure and/or funding support

The strategy will contain three main sections: i). Information and research needs; ii) Outreach needs, and iii). Implementation plan.

Information and research needs
Coastal natural hazards; beach and coastline issues
Invasive species; endangered species
Ecosystem health; habitat restoration and management
Fisheries management; marine protected areas; aquaculture
Coastal Pollution; water and sediment quality
Outreach needs
Between scientists and managers
Public education
Implementation Plan
Immediate and long-term actions
Collaborations
Funding

Final recommendations were not available at the time this document was created.

7. PLANNING RESOURCE: California Ocean and Coastal Information, Research, and Outreach Strategy

ORGANIZATION: California Ocean Protection Council
WEB ADDRESS:
http://www.calost.org/reports/NeedsWorkshopReportNov04FINAL.pdf
SCALE: Statewide
LOCATION: California
DATE: March 2005
CONTACT INFORMATION: Page Nelson, Working in Concert, Inc. page@igc.org
Leah Akins, Ocean Program Analyst California Resources Agency
Email: leah.akins@resources.ca.gov

DESCRIPTION AND RECOMMENDATIONS:
The results of this workshop are intended to guide the development of the California Ocean and Coastal Information, Research, and Outreach Strategy called for in Governor Arnold Schwarzenegger's ocean action plan titled Protecting Our Ocean: California's Action Strategy. The results from the workshop will also aid in the development of strategic plans for the California Sea Grant College Program, University of California Marine Council, and the California Ocean Science Trust.

The workshop was organized into work groups on five topic areas whose findings are summarized below. The work groups identified priority information, research, and outreach needs for their topic area considering cross-cutting issues including socio-economics, governance, and ocean observations; then, they selected a top recommendation out of their deliberations.

- Coastal Natural Hazards; Beach and Coastline Issues. Priority information and research needs identified by this work group were: Sediment Changes and Impacts; Coastal Hazard Identification, Forecasting, and Impacts; Social and Economic Information Analysis; Legal and Public Policy Analysis; and Coastal Hazard Response Strategies. Their top recommendation was the creation of a communication system to connect the information needs of state agency staff and managers with the expertise of marine scientists in academia. They recommended that the California Resources Agency, California Sea Grant College Program, University of California Marine Council, and the California Ocean Science Trust lead this effort.

- Invasive Species; Endangered Species. This work group identified a four-step approach to prioritize information and research needs. The four steps are: Prevention of new introductions, Detection of new invaders, Eradication of unwanted invaders, and Control of established species. Their top recommendation was the need to form a California Center for Invasive Species.

- Ecosystem Health; Habitat Restoration and Management. This work group identified three priority information and research needs within the coastal ecosystem context: Sufficient understanding of structure and function of nearshore ecosystems; Identification of critical habitats in need of protection and restoration (and strategies needed to carry out

their protection and restoration); and Improved understanding of the "Human Dimension" in the management and stewardship of California's ocean and coastal ecosystems. Their top recommendation was the development of a "Living Observation System" to quantify how critical coastal ecosystems are responding to natural and human drivers.

- Fisheries Management; Marine Protected Area; Aquaculture. The top information and research priorities identified by this work group are: Improving single species management by gathering more information on mortality, discards, abundance, life history, and age structure; Implementing ecosystem-based management by expanding monitoring of existing MPAs; Establishing a collaborative research initiative that would improve communication, collaboration, and conflict resolution to achieve the priorities identified by this group; and Developing a pilot project to implement ecosystem-based management that also incorporates social and economic reforms to improve overall sustainability.

- Coastal Pollution; Water and Sediment Quality. Priority information and research needs identified by this group were: Determining the impacts of non-point source and storm water pollution, Developing baseline health indicators, Identifying sources of pollutants, Assessing risks for emerging contaminants, Developing sediment management strategies and eco-toxicology, Gathering socioeconomic data, and Evaluating effectiveness of non-point source and storm water pollution control technologies. This group's top recommendation was that a web-based information clearinghouse be created for all seven priority issues.

Four central themes emerged from the work group and plenary sessions at the workshop. These key themes are: i). Need for improved coordination and collaboration between existing coastal and ocean organizations; ii). Need to open lines of communication between researchers in academia and decision makers to develop the necessary scientific data and to better apply science to management; iii). Need to manage all aspects of coastal and ocean resources and processes based on an interdisciplinary "ecosystem" approach; and iv). Need for funding and support for existing and new coastal and ocean monitoring systems.

8. PLANNING RESOURCE: California Sea Grant Strategic Plan 2006 – 2010

ORGANIZATION: Published by the California Sea Grant College Program.
WEB ADDRESS: www.csgc.ucsd.edu/PUBLICATIONS/PDF_pubs/StratPlan06Lo.pdf
SCALE: Statewide
LOCATION: California
DATE: 2006
CONTACT INFORMATION: California Sea Grant College Program, University of California, 9500 Gilman Drive, La Jolla, CA 92093-0232. (858) 534-4440

DESCRIPTION AND RECOMMENDATIONS: This plan outlines a program vision for the next five years and seeks to build consensus among stakeholders served by the program. It establishes a framework for prioritizing California Sea Grant research, education and outreach activities.

Strategic Goals of the Program:
• *Healthy Marine Ecosystems*
• *Sustainable Resource Use*
• *Sustainable Coastal Communities*
• *New Technologies*
• *Education, Training and Public Information*

Healthy Marine Ecosystems
Goal HME 1
Provide information to conserve, restore and manage coastal and marine ecosystems to ensure their long-term health and productivity
Goal HME 2
Assist in preventing introductions of non-native plants and animals and manage (and if possible eradicate) already established populations
Goal HME 3
Assist in reducing coastal water and sediment contamination in the marine environment to protect ecosystem and human health

Sustainable Resource Use
Goal SRU 1
Provide information to sustainably harvest and efficiently use and conserve fish and other marine resources
Goal SRU 2
Provide information to develop a sustainable California aquaculture industry to help meet the growing demand for seafood and minimize environmental impacts

Coastal Community Development
Goal CCD 1
Support research and outreach to help coastal communities manage coastal resources

through local and regional planning, and to promote a vibrant economy, clean environment and involved citizenry
Goal CCD 2
Improve coastal water quality to protect ecosystem and public health and the prosperity of communities whose economies rely on coastal tourism, recreation, fishing and other coastal dependent uses
Goal CCD 3
Assist in protecting human life and property from coastal hazards

New Technologies
Goal NT 1
Help develop and apply new and existing technologies to address specific problems and enhance marine science studies

Education, Training, and Public Information
Goal ETPI 1
Develop a scientifically literate citizenry
Goal ETPI 2
Educate the next generation of marine scientists and policy-makers
Goal ETPI 3
Maintain scientifically knowledgeable workforce

9. PLANNING RESOURCE: Marine Life Management Act

ORGANIZATION: California Department of Fish and Game, Marine Region
WEB ADDRESS: http://www.dfg.ca.gov/mrd/mlma/
SCALE: Statewide with regional recommendations
LOCATION: California
DATE: January 1, 1999
CONTACT INFORMATION: Department of Fish and Game Headquarters
1416 Ninth Street Sacramento, CA 95814

DESCRIPTION AND RECOMMENDATIONS:
The Marine Life Management Act (MLMA), which became law on January 1, 1999, opened a new era in the management and conservation of California's marine living resources. The MLMA applies not only to fish and shellfish taken by commercial and recreational fishermen, but to all marine wildlife. Rather than assuming that exploitation should continue until damage has become clear, the MLMA shifts the burden of proof toward demonstrating that fisheries and other activities are sustainable. The MLMA requires an ecosystem perspective including the whole environment and strongly emphasizes science-based management developed with the help of all those interested in California's marine resources.

The fishery management system established by the MLMA applies to four groups of fisheries:

- The nearshore finfish fishery and the white seabass fishery.
- Emerging fisheries - new and growing fisheries that are not currently subject to specific regulation.
- Those fisheries for which the Fish and Game Commission held some management authority before January 1, 1999. Future regulations affecting these fisheries will need to conform to the MLMA.

The MLMA sets out several underlying goals.

- Conserves Entire Systems: It is not simply exploited populations of marine life that are to be conserved, but the species and habitats that make up the ecosystem of which they are a part.
- Non-Consumptive Values: Marine life need not be consumed to provide important benefits to people, including aesthetic and recreational enjoyment as well as scientific study and education.
- Sustainability: Fisheries and other uses of marine living resources are to be sustainable so that long-term health is not sacrificed for short-term benefits.
- Habitat Conservation: The habitat of marine wildlife is to be maintained, restored or enhanced, and any damage from fishing practices is to be minimized.
- Restoration: Depressed fisheries are to be rebuilt within a specified time.
- Bycatch: The bycatch of marine living resources in fisheries is to be limited to acceptable types and amounts.
- Fishing Communities: Fisheries management should recognize the long-term interests of people dependent on fishing, and adverse impacts of management measures on fishing communities are to be minimized.

To meet these standards, the MLMA calls for using several basic tools:

- Science: Management is to be based on the best available scientific information as well as other relevant information. Lack of information should not greatly delay taking action. To help ensure the scientific soundness of decisions, key documents should be reviewed by experts.
- Constituent Involvement: The MLMA places a strong emphasis on decision-making that is open and that involves people who are interested in or affected by management measures.
- Fishery Management Plans: Rather than ad hoc and piecemeal decisions on individual fisheries, the aim is to base decisions on comprehensive reviews of fisheries and on clear objectives and measures for fostering sustainable fisheries. The vehicle for this objective is a fishery management plan.
- Master Plan: The Department will prepare, and the Fish & Game Commission will adopt, a Master Plan that prioritizes fisheries according to the need for comprehensive management through fishery management plans.
- Status of the Fisheries Report: Annually, the Department will prepare a report on the status of California's fisheries and the effectiveness of management programs.

IV. Plans with Region-Specific Recommendations

10. PLANNING RESOURCE: MARINE LIFE PROTECTION ACT

ORGANIZATION: California Department of Fish and Game
WEB ADDRESS: http://www.dfg.ca.gov/mrd/mlpa/index.html
SCALE: Statewide with regional recommendations.
LOCATION: California
DATE: 1999
CONTACT INFORMATION: Department of Fish and Game Headquarters
1416 Ninth Street Sacramento, CA 95814

DESCRIPTION AND RECOMMENDATIONS:
Legislation required that the Department of Fish and Game develop a plan for establishing networks of marine protected areas in California waters to protect habitats and preserve ecosystem integrity, among other things. The following information provides a brief overview of the Marine Life Protection Act (MLPA).

The MLPA states that "marine life reserves" (defined as no-take areas) are essential elements of an MPA system because they "protect habitat and ecosystems, conserve biological diversity, provide a sanctuary for fish and other sea life, enhance recreational and educational opportunities, provide a reference point against which scientists can measure changes elsewhere in the marine environment, and may help rebuild depleted fisheries"

The master plan is required to include recommendations for a preferred alternative network of MPAs with "an improved marine life reserve component". The MLPA further states that "it is necessary to modify the existing collection of MPAs to ensure that they are designed and managed according to clear, conservation-based goals and guidelines that take full advantage of the multiple benefits that can be derived from the establishment of marine life reserves"

MLPA Goals and Guildelines:

- To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.
- To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted.
- To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity.
- To protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic value.
- To ensure that California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.
- To ensure that the state's MPAs are designed and managed, to the extent possible, as a network.

Locations and maps of existing CDFG MPA found within the Needs Assessment project area:

Humboldt County

- Punta Gorda State Marine Reserve. This area is bounded by the three-fathom depth contour.

Mendocino County

- MacKerricher State Marine Conservation Area. This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points:
- Point Cabrillo State Marine Conservation Area. This area is bounded by the mean high tide line, a distance of 1000 feet offshore, and the following points:
- Russian Gulch State Marine Conservation Area. This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points:
- Van Damme State Marine Conservation Area. This area is bounded by the mean high tide line, the 3-fathom depth contour and the following points:
- Manchester and Arena Rock State Marine Conservation Area. This area is bounded by the mean high tide line and the following points:

11. PLANNING RESOURCE: Critical Coastal Areas Plan 2002

ORGANIZATION: California Coastal Commission
WEB ADDRESS: www.coastal.ca.gov/nps/Web/misc_resources/cca-strategy.pdf
SCALE: Statewide
LOCATION: California
DATE: 2002
CONTACT INFORMATION: North Coast District Office Bob Merrill, District Manager 710 E Street, Suite 200 Eureka, CA 95501
(707) 445-7833 or
(707) 445-7834
FAX (707) 445-7877

DESCRIPTION AND RECOMMENDATIONS:
This report describes the Critical Coastal Areas (CCA) program of the NPS Plan and the progress made to date by the Coastal Commission.

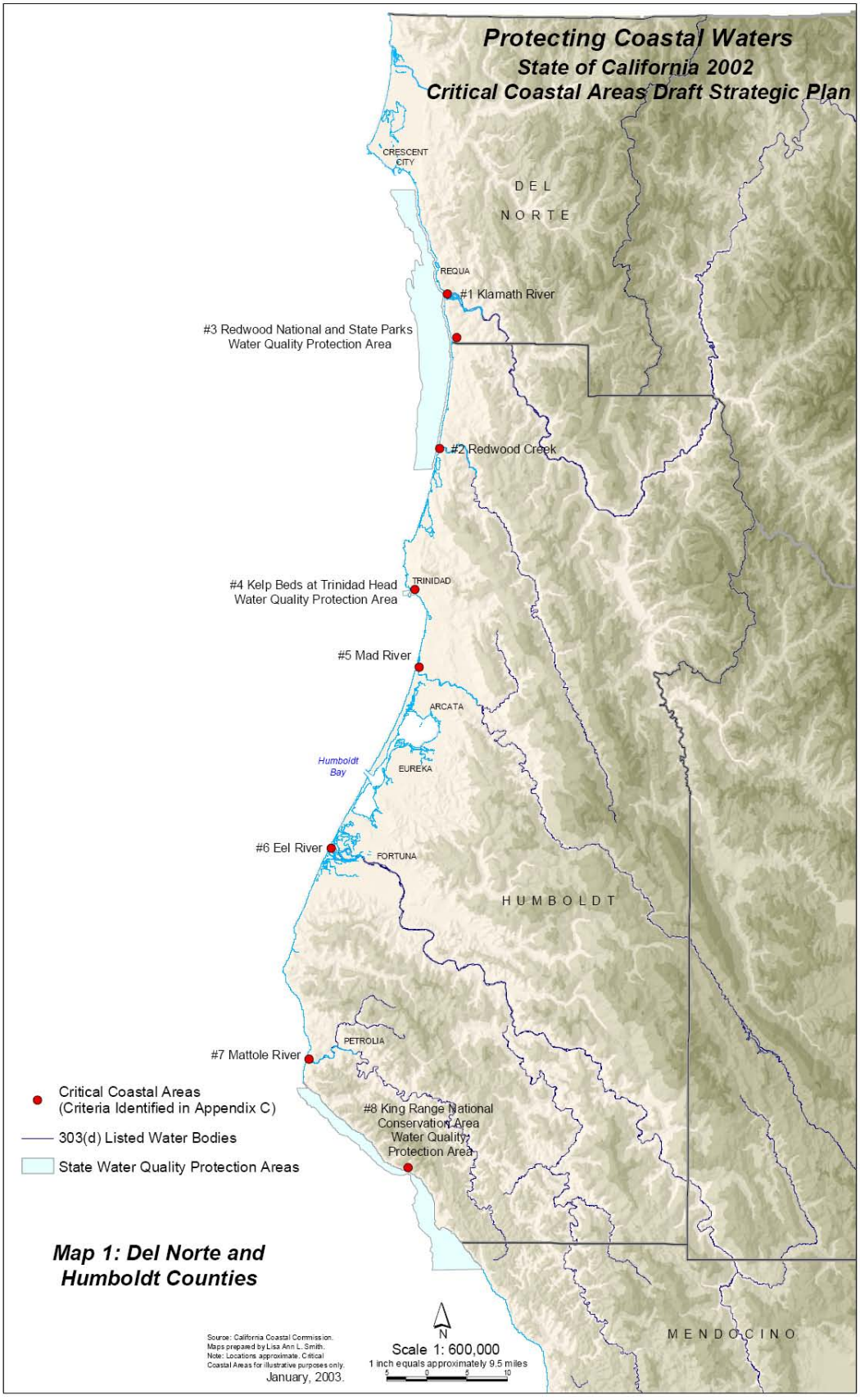
The goals of the CCA program are:

- To ensure that the Management Measures and Best Management Practices (BMPs) of the NPS Plan are fully implemented in select areas of the coast identified as CCAs1;
- To provide a mechanism to develop and apply additional Management Measures as needed to achieve or maintain high quality water in CCAs; and
- To develop Action Plans for each CCA to improve degraded water quality or protect exceptional water quality.

CALIFORNIA'S CRITICAL COASTAL AREA STRATEGY
The Coastal Commission formed the CCA Committee, as required by the NPS Plan, to design a process for identifying critical areas of the California coast where water quality is threatened by new or expanding land uses, and to create a list of these areas. The CCA Committee was convened in 2000 to develop a strategy for protecting specific areas of the coast from nonpoint source pollution, and using the lessons learned for application throughout the California coast. The Committee developed goals for the CCA program in 2000, agreed upon a method to identify a list of CCAs, and developed a strategy to determine actions to be taken at CCAs. Below is a list and maps of the Critical Coastal Areas relevant to the area of interest for this Needs Assessment.

List includes CCA# (north to south), CCA name, and method of classification: 1) 303(d) listed waterbo flowing into MMAs, 2) SWQPAs, and 3) 1995 initial list

CCA #	CCA Name	303(d) listed waterbodies adjacent to MMAs	SWQPA	1995 list	Notes (list additional designations)
1	Klamath River	x	x	x	
2	Redwood Creek	x	x	x	
3	Redwood National Park		x		Park includes Klamath and Redwood CCAs within boarders
4	Kelpbeds at Trinidad Head		x		
5	Mad River			x	
6	Eel River			x	
7	Mattole River	x		x	
8	King Range National Conservation Area		x		
9	Pudding Creek	x			
10	Noyo River			x	
11	Pygmy Forest Ecological staircase		x		
12	Big River			x	


Protecting Coastal Waters
State of California 2002
Critical Coastal Areas Draft Strategic Plan
CRESCENT CITY
DEL NORTE
REQUA
#1 Klamath River
#3 Redwood National and State Parks Water Quality Protection Area
#2 Redwood Creek
#4 Kelp Beds at Trinidad Head Water Quality Protection Area
TRINIDAD
#5 Mad River
ARCATA
Humboldt Bay
EUREKA
#6 Eel River
FORTUNA
HUMBOLDT
PETROLIA
#7 Mattole River
#8 King Range National Conservation Area Water Quality Protection Area
MENDOCINO
Critical Coastal Areas (Criteria Identified in Appendix C)
303(d) Listed Water Bodies
State Water Quality Protection Areas
Map 1: Del Norte and Humboldt Counties
Source: California Coastal Commission. Maps prepared by Lisa Ann L. Smith. Note: Locations approximate. Critical Coastal Areas for illustrative purposes only.
January, 2003.
N
Scale 1: 600,000
1 inch equals approximately 9.5 miles
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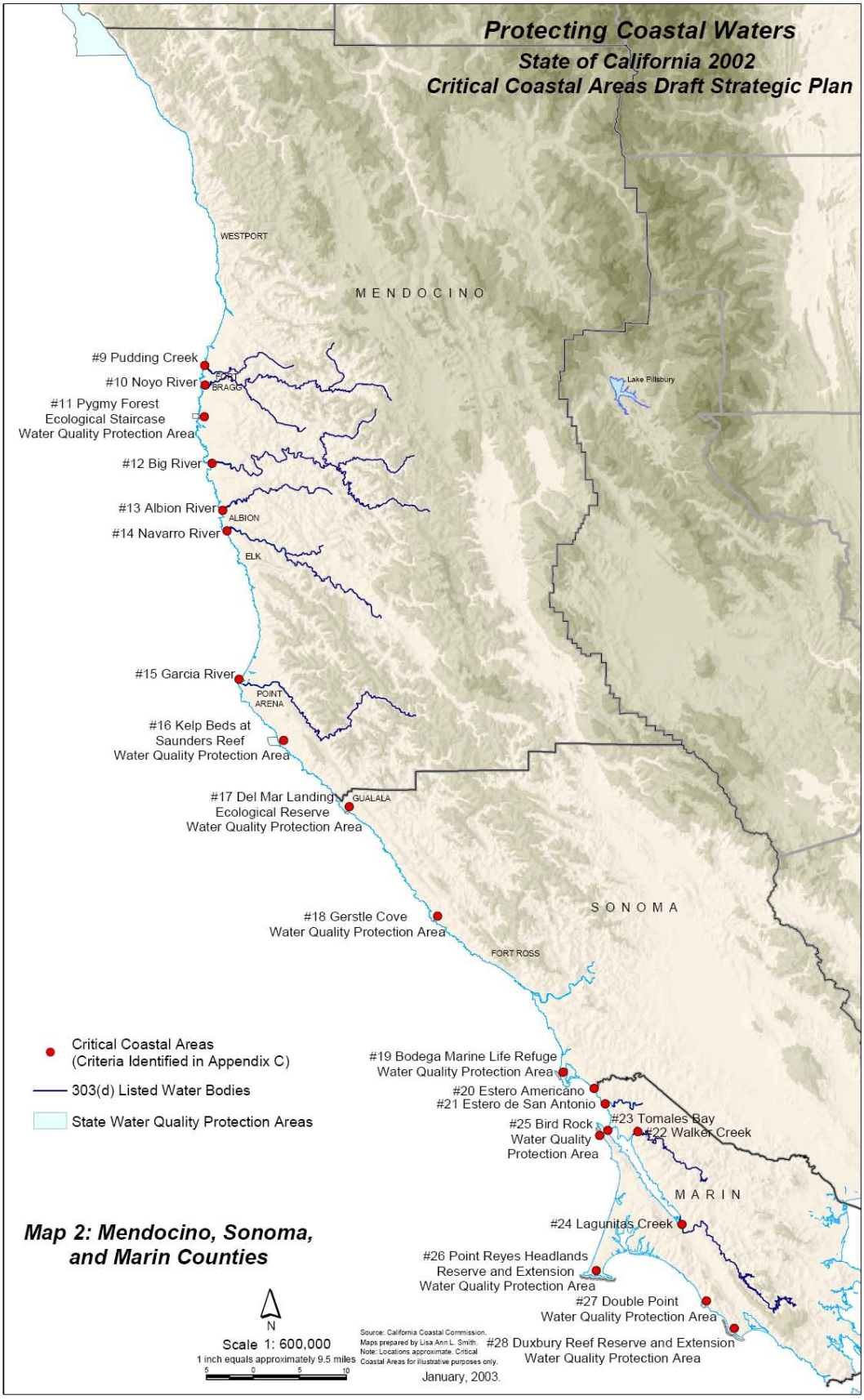

Protecting Coastal Waters
State of California 2002
Critical Coastal Areas Draft Strategic Plan
WESTPORT
MENDOCINO
#9 Pudding Creek
#10 Noyo River
FORT BRAGG
#11 Pygmy Forest Ecological Staircase Water Quality Protection Area
#12 Big River
#13 Albion River
ALBION
#14 Navarro River
ELK
Lake Pillsbury
#15 Garcia River
POINT ARENA
#16 Kelp Beds at Saunders Reef Water Quality Protection Area
#17 Del Mar Landing Ecological Reserve Water Quality Protection Area
GUALALA
#18 Gerstle Cove Water Quality Protection Area
SONOMA
FORT ROSS
#19 Bodega Marine Life Refuge Water Quality Protection Area
#20 Estero Americano
#21 Estero de San Antonio
#23 Tomales Bay
#22 Walker Creek
#25 Bird Rock Water Quality Protection Area
MARIN
#24 Lagunitas Creek
#26 Point Reyes Headlands Reserve and Extension Water Quality Protection Area
#27 Double Point Water Quality Protection Area
#28 Duxbury Reef Reserve and Extension Water Quality Protection Area
Critical Coastal Areas (Criteria Identified in Appendix C)
303(d) Listed Water Bodies
State Water Quality Protection Areas
Map 2: Mendocino, Sonoma, and Marin Counties
N
Scale 1: 600,000
1 inch equals approximately 9.5 miles
Source: California Coastal Commission. Maps prepared by Lisa Ann L. Smith. Note: Locations approximate. Critical Coastal Areas for illustrative purposes only.
January, 2003.

12. PLANNING RESOURCE: California Coastal National Monument Cooperative Management Plan

ORGANIZATION: California State Office Bureau of Land Management
WEB ADDRESS: http://www.blm.gov/ca/pa/coastal_monument/ccnm_rmp_index.htm
SCALE: Statewide
LOCATION: California
DATE: September 2005
CONTACT INFORMATION: Copies available upon request from the monument office at 299 Foam St., Monterey, CA 93940, telephone (831) 372-6115; or email at ccnm@ca.blm.gov.

DESCRIPTION AND RECOMMENDATIONS: A comprehensive and cooperative management plan for the California Coastal National Monument (CCNM), covering more than 20,000 rocks and islands along the scenic 1,100-mile California coast, has been approved by the U. S. Bureau of Land Management (BLM).

The plan contains broad direction for the protection of the geologic formations and habitats for seabirds, sea lions, seals, and plant life. It focuses heavily on multi-agency and other partnerships and involvement of local communities as the keys to management and protection.

The plan outlines how the BLM, California Department of Fish and Game and California Department of Parks and Recreation will coordinate day-to-day management of the monument, and the roles of collaborative and stewardship partners. A key element will be future establishment of "gateway communities" up and down the coast, involving areas, cities, and towns in helping to manage and interpret the monument.

Management Goals

The goals for management of the CCNM are as follows:

Goal 1: Protect the geological formations and the habitat that they provide for biological resources of the CCNM.

Goal 2: Protect the scenic and cultural values associated with the CCNM.

Goal 3: Provide and promote research opportunities to understand the resources and values of the CCNM.

Goal 4: Provide the public with interpretive information and educational initiatives regarding the values and significance of the CCNM and the fragile ecosystems of the California coastline.

Goal 5: Coordinate planning and management activities with the numerous jurisdictions on and adjacent to the CCNM and use the CCNM to help enhance cooperative and collaborative initiatives and partnerships with a variety of communities, agencies, organizations, academic institutions, the public, and other stakeholders.

See maps below for information on California North Coast Ocean and Coastal Managed areas and the CCNM Sub-units in the North Region.

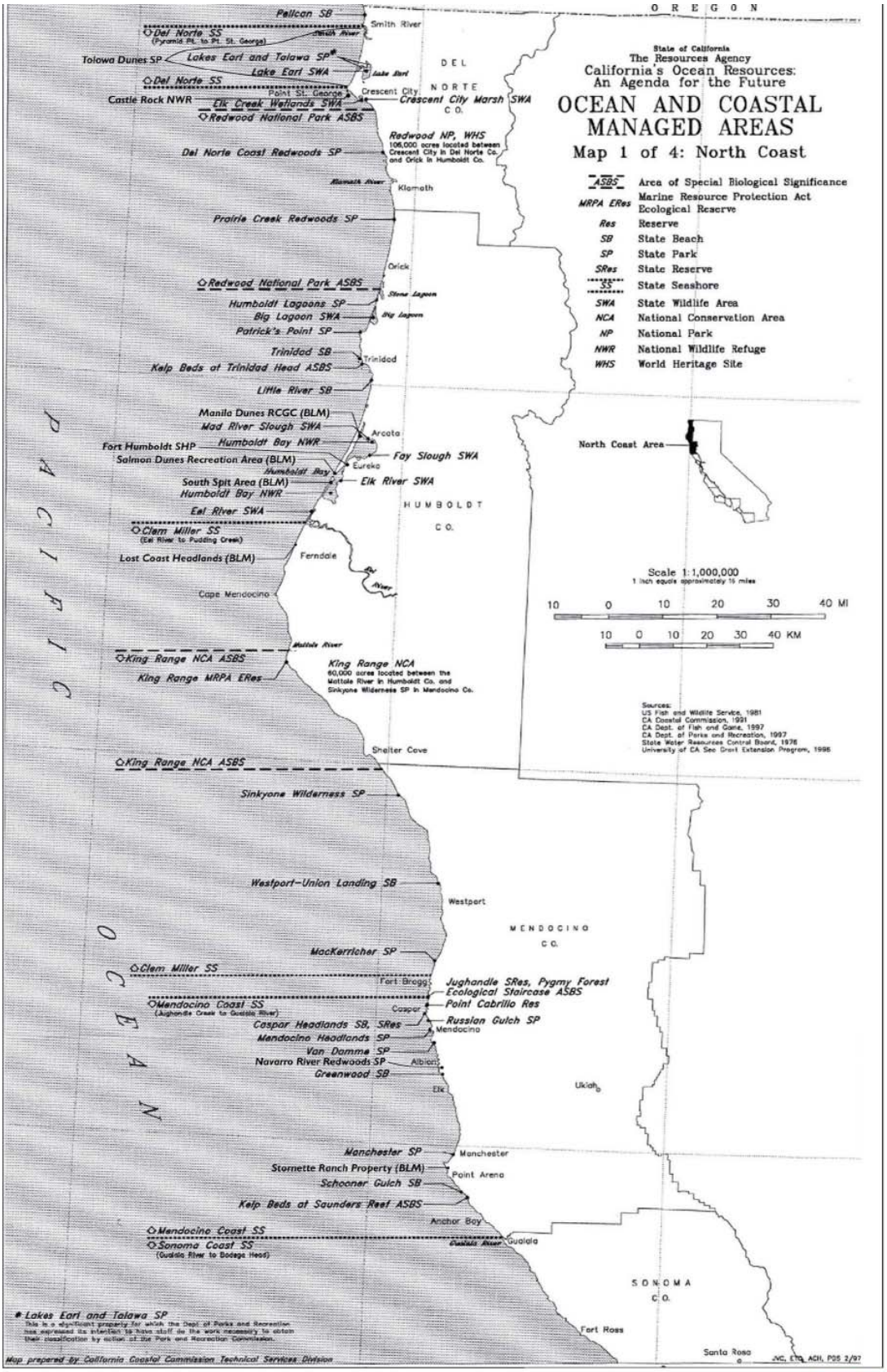


Figure 1-4b
Ocean and Coastal Managed Areas, North Coast

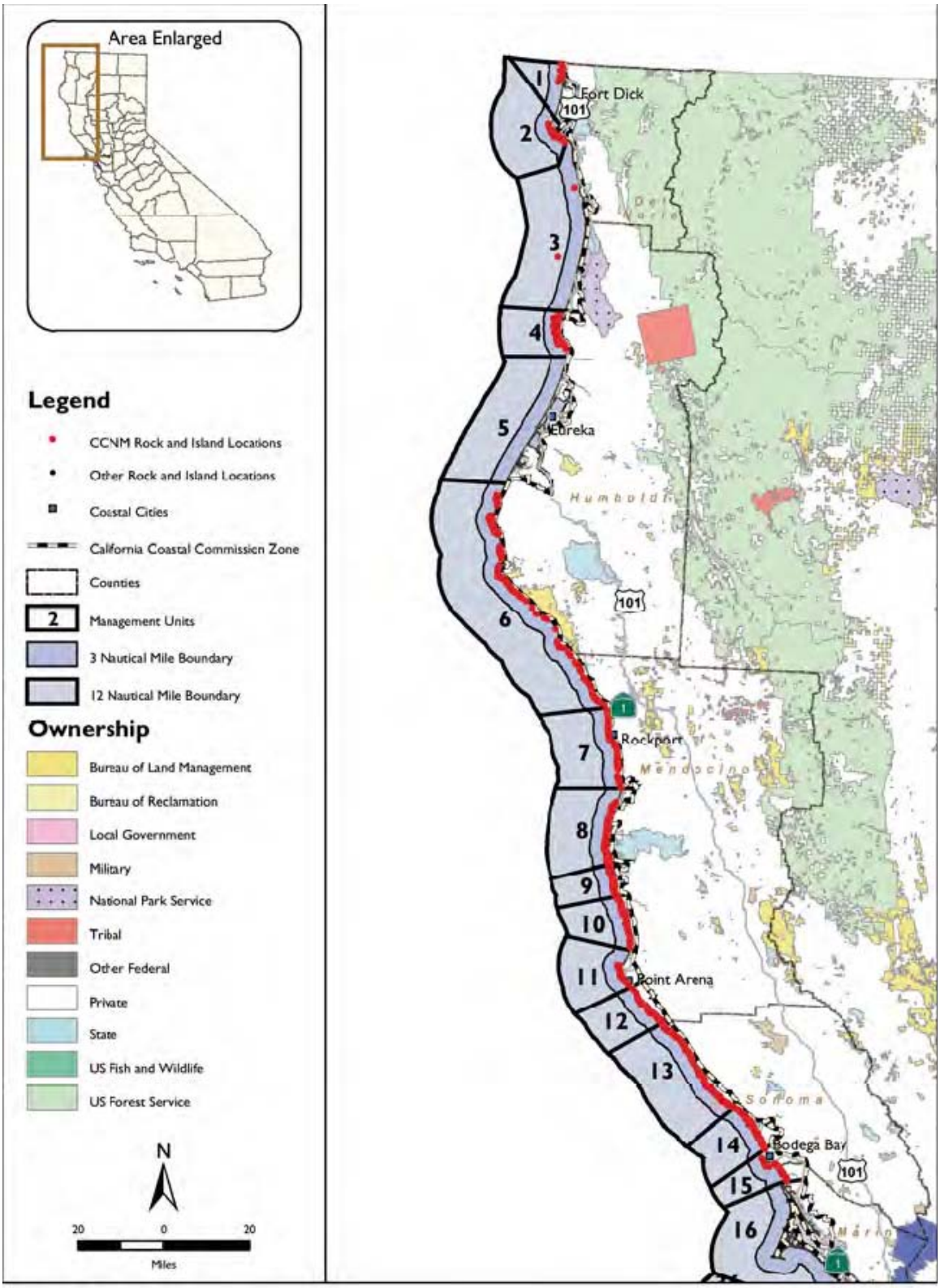


Figure 2-2a
CCNM Sub-Units, North Region

13. PLANNING RESOURCE: Northern California Marine Ecoregional Assessment

ORGANIZATION: The Nature Conservancy
WEB ADDRESS: http://nature.org/initiatives/marine/strategies/art12283.html for background information.
SCALE: Regional
LOCATION: Sub-area relevant to the Needs Assessment: Oregon border to Cape Mendocino
DATE: February 2006
CONTACT INFORMATION: Mary Gleason The Nature Conservancy of CA
201 Mission Street, 4th Floor San Francisco, CA 94105 mgleason@tnc.org

DESCRIPTION AND RECOMMENDATIONS:
The Northern California Marine Ecoregional Assessment extends from the Oregon California to Point Conception provides a conservation vision for the ecoregion by identifying a portfolio of conservation areas that represent the diversity of estuarine, nearshore and offshore habitats. A total of 55 marine and estuarine portfolio conservation areas were delineated; these conservation areas together represent 25% of the area of ecoregion. 17 of these areas are located within the area of interest of the Needs Assessment. While the ultimate goal is the protection of the entire portfolio, a preliminary and qualitative assessment of threats and opportunities in the ecoregion was used to identify priority action areas. No strategies were identified for conservation at the individual sites.

Conservation area profiles and targets identified for the Oregon border to Cape Mendocino sub-area:
1. Smith River – Point St. George 90.8 square miles.
This area includes the Smith River and estuary, Castle Rock, St. George Reef, and Lake Earl and the coastal plain.

2. NCC-2 91.5 square miles.
This area is offshore of the California-Oregon border and includes a variety of soft bottom benthic habitats on the continental shelf.

3. NCC-3 37.2 square miles.
This area is far offshore of Crescent City and includes a variety of deep sea soft and hard bottom habitats on the continental slope.

4. Klamath River and Estuary 8.8 square miles.
This area includes the Klamath River and associated estuary as well as False Klamath rocks.

5. NCC-5 50.4 square miles.
This area is located offshore from the Humboldt Lagoons and includes a variety of soft bottom habitats around the shelf-slope break.

6. Humboldt Lagoons 49.2 square miles.
The Humboldt Lagoons PCA includes the Redwood Creek watershed and a chain of lagoons along the coast (Freshwater, Stone, Dry, and Big Lagoons).

7. Humboldt Bay 101.8 square miles.
The Humboldt Bay PCA includes the Humboldt-Arcata Bay and estuary complex.

8. Eel River Estuary 33.5 square miles.

9. Cape Mendocino 1,088 square miles.
This PCA includes the Mendocino/Gorda escarpment as well as submarine canyons: Eel canyon, Mendocino canyon, and Mattole canyon. It also includes a variety of hard and soft bottom habitats and areas of high bathymetric complexity, Blunts reef, kelp beds nad rocky intertidal areas in the nearshore, and the Mattole River estuary.

10. Off-shore Mendocino Escarpment 294.5 square miles.
This area is further offshore from the Cape Mendocino PCA and includes the deeper portion of the Mendocino escarpment exhibiting areas of complex bathymetry as well as hard and soft bottom bathybenthal habitats.

11. Delgada – Spanish Canyons 217.0 square miles.
This area includes the nearshore habitats of the canyon heads, bull kelp beds and soft and hard bottom substrates. It also includes the shelf-slope break.

12. Cape Vizcaino 11.6 square miles.
Includes nearshore rocky reef and kelp bed habitats.

13. Vizcaino Canyon 265.7 square miles.
Includes extensive soft bottom habitats and areas of high bathymetric complexity.

14. Noyo River and Canyon 351.6 square miles.
Includes extensive rocky intertidal and bull kelp habitat as well as deeper water shelf-slope break and continental slope habitat.

15. Big-Albion-Navarro Rivers 71.2 square miles.
This coastal PCA includes the Big River, Albion River, and Navarro River as well as smaller rivers and streams. There are also rocky cliffs, kelp beds, and intertidal areas.

16. Point Arena 9.9 square miles.
This PCA includes the adjacent Garcia River estuary and coastal streams.

17. Gualala River and Estuary 61.8 miles.
Includes two nearshore rocky reefs.

Data gaps and limitations (could be areas of focus for the needs assessment and ocean protection council funding) identified in the document:

- Lack of mapped data for some important targets:
    - Hydrographic features
    - Marine fish
    - Market squid
    - Native shellfish
    - Pelagic hotspots
    - Deep sea hotspots

- Lack of validation of the benthic model
- Lack of information on regional threats
- Lack of spatial socioeconomic data

Conservation opportunities:

There is a growing recognition of the need for marine conservation efforts in the NCME. All of the planning efforts by partners described represent potential opportunities for TNC to align our conservation vision with others. Some additional opportunities in the region included:

- California Ocean Protection Act
- Marine Life Protection Act Initiative
- Marine Life Management Act
- National Marine Sanctuaries
- NMFS Groundfish Essential Fish Habitat (EFH)
- Conservation of pelagic ecosystems
- Rationalizing fisheries
- Coastal watershed management
- Building on TNC's terrestrial activities
- Establishing new TNC project areas

Possible conservation strategies:

- Marine protected areas
- Ocean zoning
- Market-oriented strategies
- Policy initiatives
- Community-based fisheries management
- Acquisition of private land
- Leasing and ownership of submerged habitats
- Restoration of critically imperiled ecosystems and species
- Restoration of coastal streams for anadramous fish
- Improved management of marine resources held in trust by state and
- federal agencies
- Abatement of land-based sources of threats

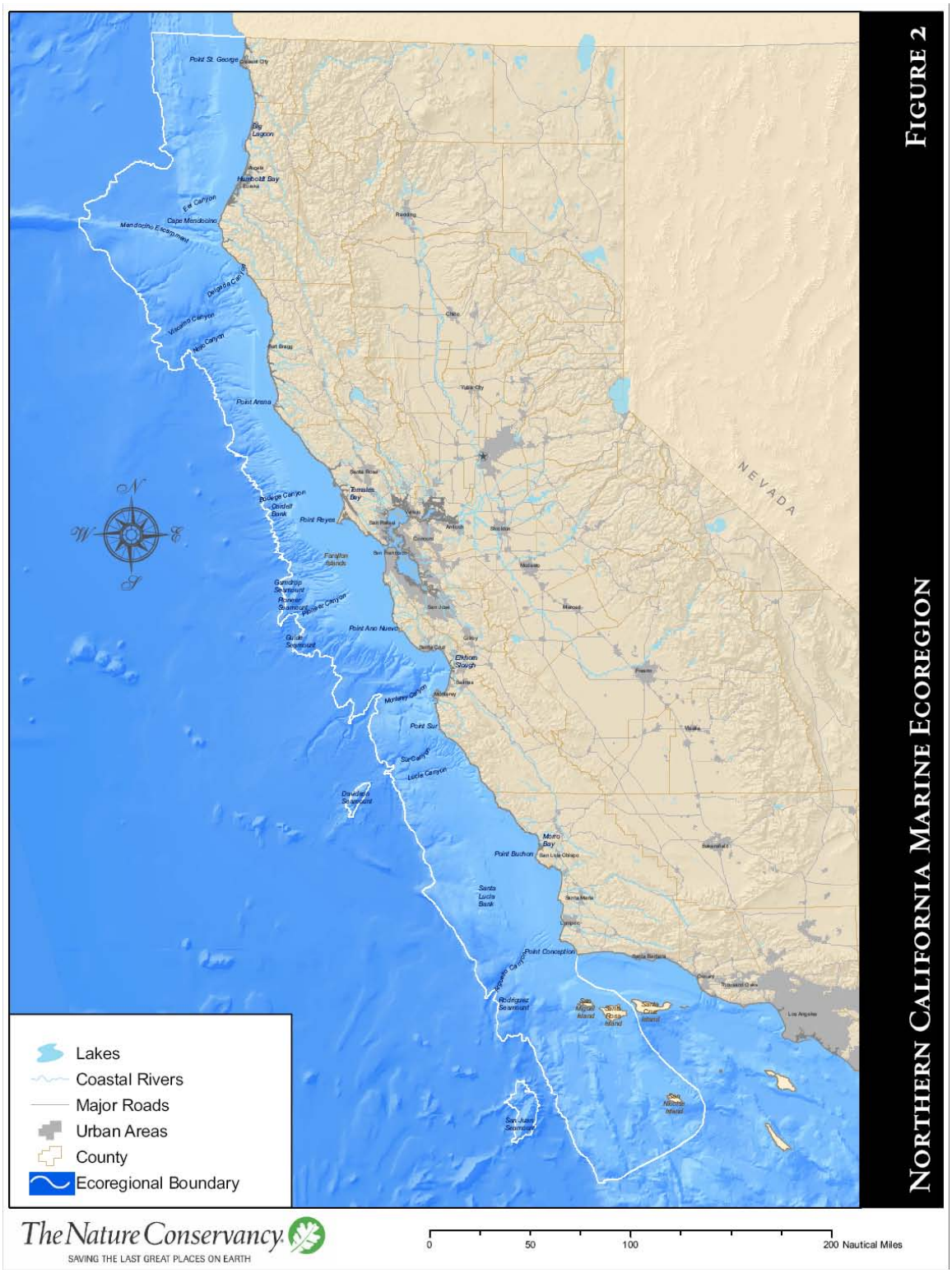
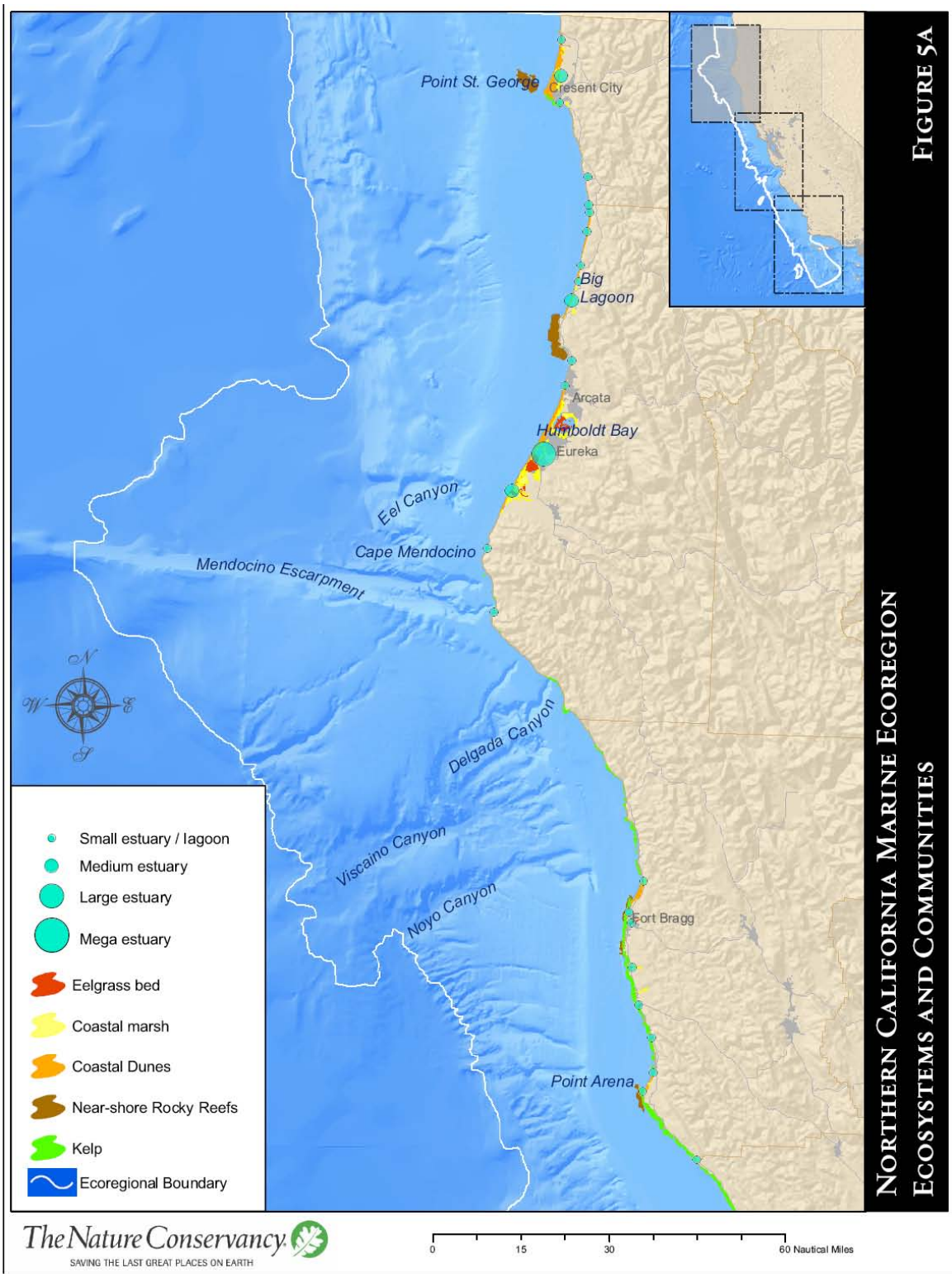
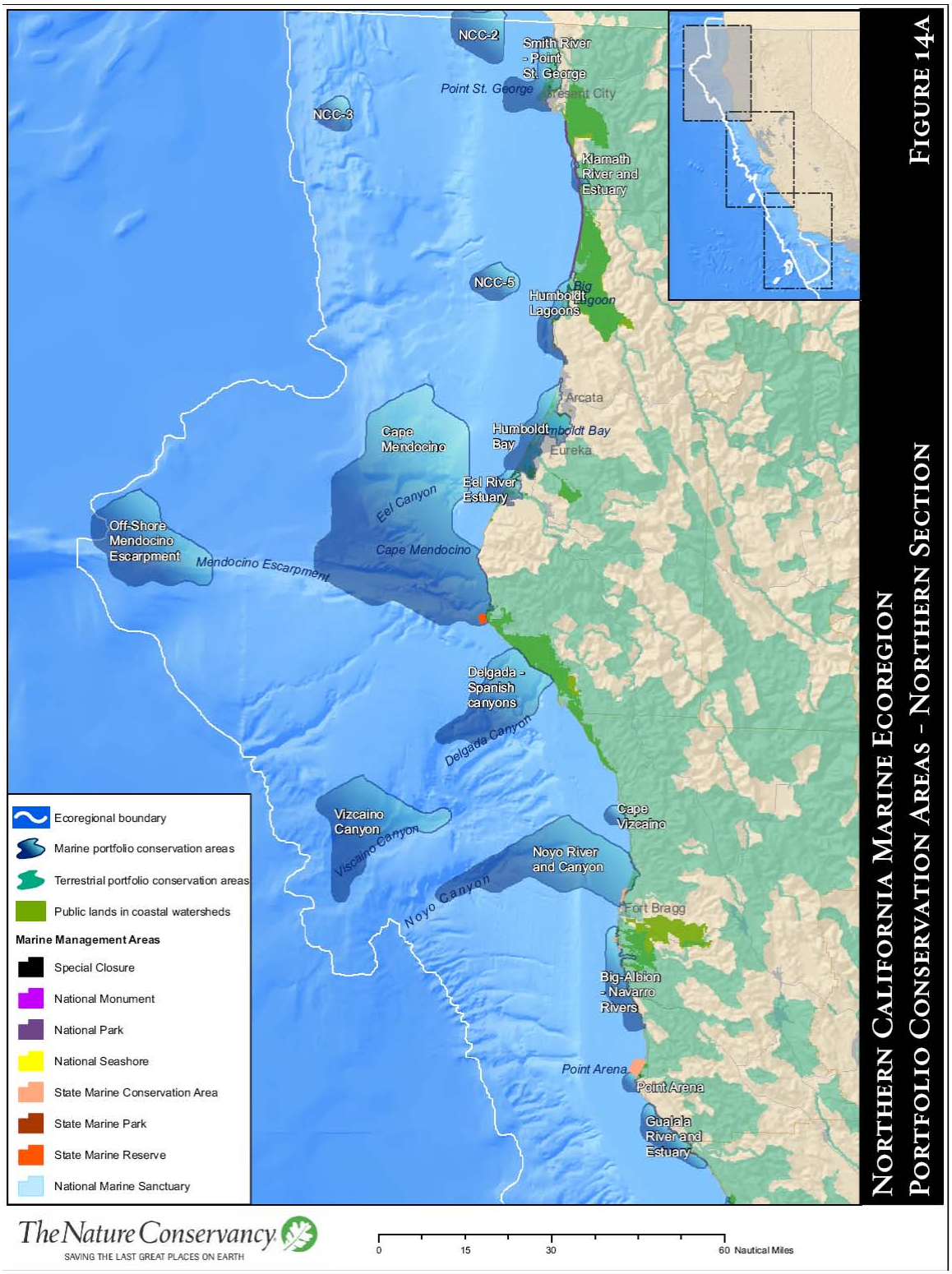


FIGURE 2
NORTHERN CALIFORNIA MARINE ECOREGION
NEVADA
Point St. George
Big Lagoon
Humboldt Bay
Eel Canyon
Cape Mendocino
Mendocino Escarpment
Delgada Canyon
Volcano Canyon
Noyo Canyon
Point Arena
Bodega Canyon
Cordell Bank
Point Reyes
Farallon Islands
Gumdrop Seamount
Pioneer Seamount
Pioneer Canyon
Point Ano Nuevo
Guide Seamount
Elkhorn Slough
Monterey Canyon
Point Sur
Sur Canyon
Lucia Canyon
Davidson Seamount
Morro Bay
Point Buchon
Santa Lucia Bank
Point Conception
Arguello Canyon
Rodriguez Seamount
San Nicolas Island
San Juan Seamount
Lakes
Coastal Rivers
Major Roads
Urban Areas
County
Ecoregional Boundary
The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH
0
50
100
200 Nautical Miles


Point St. George
Crescent City
Big Lagoon
Arcata
Humboldt Bay
Eureka
Eel Canyon
Cape Mendocino
Mendocino Escarpment
Delgada Canyon
Viscaino Canyon
Noyo Canyon
Fort Bragg
Point Arena
N
W
E
S
Small estuary / lagoon
Medium estuary
Large estuary
Mega estuary
Eelgrass bed
Coastal marsh
Coastal Dunes
Near-shore Rocky Reefs
Kelp
Ecoregional Boundary
The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH
0
15
30
60 Nautical Miles
FIGURE 5A
NORTHERN CALIFORNIA MARINE ECOREGION
ECOSYSTEMS AND COMMUNITIES



Data Gaps and Limitations

The ecoregional assessment relied primarily on large readily available datasets that

allowed TNC to map the distribution of targets over the entire region. Based on the datasets and approach used, there were several data gaps or data limitations that should be considered important sources of uncertainty at the scale of the ecoregional assessment:

Lack of Mapped Data for Some Important Targets:
Hydrographic features: Persistent fronts, eddies, and offshore jets are important hydrographic features that influence regional productivity, recruitment patterns, and the movement and distribution of many species.

Marine Fish: Data on the occurrence and distribution of most marine fish species has not yet been compiled in a spatial format.

Native shellfish: Two groups of native shellfish were considered potentially important targets because of their role in creating habitat structure that supports many other species. The native Olympia oyster, Ostrea lurida , ranges from Alaska to Baja California and was formerly common in NCME bays and estuaries. They were the target of commercial harvest and culture through the early 1900s; their natural populations have been greatly reduced by harvesting, pollution, and habitat alteration (USFWS and US ACOE 1989). At this time, information on the distribution of native oysters in California bays and estuaries has not been compiled.

Pelagic Hotspots: Cetaceans, sharks, tunas, seabirds and other species that migrate and forage widely are difficult to include in the assessment as their distributions are affected by highly dynamic hydrographic processes that affect their food sources and movement patterns. Incorporating data on the distribution of these species (other than seabird colony locations) is problematic and, for many species, those data are not available in a spatial format except for geographically limited areas. Identifying pelagic hotspots, or areas in the open ocean that are important for numerous species, is one approach.

Deep Sea Hotspots: Research institutions in the NCME lead the world in deep sea exploration; however, with the exception of portions of submarine canyons in the Monterey area, the Gorda Escarpment, and a few seamounts, most of the deeper reaches of the ecoregion have not been explored for their biodiversity.

Lack of validation of the benthic habitat model.
The accuracy of the benthic model (ie. whether a predicted habitat type is really present) has not been validated. A sampling effort to validate the model and correlate at least a subset of types with other measures of biodiversity would add value to the assessment. More refined benthic mapping statewide, especially in near-shore areas, would be very useful for conservation planning.
Need for improved viability assessment. Developing quantitative criteria and the data to support an evaluation of viability for all marine target occurrences would improve the assessment.

Lack of information on regional threats. Spatial data on marine threats is generally lacking. Both a regional assessment of threats to marine biodiversity and more site-specific information is

needed to better identify the conservation areas that are most highly threatened. TNC's site planning approach, known as the 5-S framework, will be used to assess threats at selected action areas in the future. The 5-S framework (Low 2003) can be used to identify key systems (conservation targets and the attributes that maintain their viability), stresses (types of destruction, degradation or impairment threatening those systems), sources (agents generating the stresses), strategies (activities employed to abate threats), and measures of success (measures of biodiversity health and threat abatement).

Lack of spatial socioeconomic data. The importance of understanding socioeconomic conditions and marine resource use patterns for developing appropriate conservation strategies is widely recognized; however, the compilation of spatial data related to human use of or impacts on marine resources has not kept pace.

SUMMARY AND POSSIBLE NEXT STEPS

It is clear from the information contained in this document that a great deal of work has been done on marine conservation planning efforts over the last five years. Several common themes emerged from this body of work in terms of recommended actions. These include recommendations to:

- Develop and launch a comprehensive Ocean Observing System
- Complete the California Coastal Sediment Management Plan
- Assess site-specific sediment impacts and develop appropriate local management strategies
- Develop an ecosystem-based approach for managing marine resources
- Address issues of water quality and pollution
- Increase the level of benthic marine habitat mapping and take measures to protect marine habitat
- Promote ocean education to instill an ocean stewardship ethic

RECOMMENDATIONS AND REGIONAL GAPS IDENTIFIED BY CATEGORY

Each of the documents analyzed for the Marine Synthesis contained information relevant to the Needs Assessment region of focus but at varying levels of scale. The strategies, goals, visions, objectives, and recommendations focusing on coastal conservation and the land-to-sea continuum from these assessments were organized into the following categories:

- Collaboration/Partnerships
- Planning Strategies
- Restoration/Enhancement
- Studies/Research/Data
- Outreach/Education
- Government Policies/ Regulations
- Ocean Protection

With the exception of The Nature Conservancy and the California Coastal Commission documents very little information exists in the documents on a scale applicable to the region of focus for this project.

(Note: each recommendation is followed a number corresponding to the assessment document that it originated from or the word “interview” indicating a recommendation resulting from the one-on-one interviews).

1. Collaboration/Partnerships

- Strengthen coastal and watershed management and the links between them. (2)

- Improve coordination and collaboration between existing coastal and ocean organizations. (7) This recommendation is consistent with a need identified in the terrestrial environment as well.

- Create a communication system to connect the information needs of state agency staff and managers with the expertise of marine scientists in academia. (7)

- Coordination between the Bureau of Land Management, California Department of Fish and Game and California Department of Parks and Recreation for day-to-day management of the California Coastal National Monuments and the roles of collaborative and stewardship partners. A key element will be future establishment of "gateway communities" up and down the coast, involving areas, cities, and towns in helping to manage and interpret the monument. (12)

2. Planning Strategies

- Complete the California Coastal Sediment Management Plan. (4)

- Develop a Long-Term Funding Strategy for Ocean and Coastal Protection and Management. (4)

- Develop a Coastal Ocean Observation Strategic Plan to guide the allocation of the state's $21 million investment in the Ocean Currents Monitoring System and its integration with all existing and future observing and monitoring systems. (4)

- Develop an action plan to address nonpoint source pollution and protect water quality on a watershed basis. (1) (cross-reference with Section 4)

- Improve integration of coastal planning with the management of coastal watersheds. (5)

- Develop a plan for establishing networks of marine protected areas in California waters to protect habitats and preserve ecosystem integrity. (10) (1) (13) (cross-reference with Section 7)

- Identify funding for the development of an ecosystem based management plan for Humboldt Bay. (Interview)

3. Restoration/Enhancement

- Restructure, focus, and strengthen the "California Watershed Management Memorandum of Understanding (MOU)" to identify priority watersheds for resource protection and use, fishery recovery, and water quality, and improve delivery of state technical and financial assistance to impaired coastal watersheds. (4)

- Form a California Center for Invasive Species, with approach to prevent, detect, eradicate and control. (7)

- Increase the monitoring needed to document the distribution of invasive species, identify new invasions soon enough to provide some chance of responding effectively, and prioritize potential routes of invasion for surveillance. (5)

- Help prevent introduction of non-native plants and animals, and manage and eradicate already-established populations. (8)

- Expand regional scale, research, monitoring, and management to the scale of littoral cells, based on the knowledge that the larger projects are, relative to the scale of the littoral cell, the more effective they are likely to be. (5)

4. Studies/Research/Data

- Double the nation's investment in ocean research, launch a new area of ocean exploration, and create the advanced technologies and modern infrastructure needed to support them. (2)

- Increase research to link changes in land use and runoff to impacts on near shore water quality and habitat. (5)

- Develop and implement a comprehensive national ocean research and monitoring strategy. (1)

- Double funding for basic ocean science and research. (1)

- Implement the national integrated Ocean Observing System and a national monitoring network. (2) (cross-reference Section 2)

- Launch the Coastal Currents Monitoring System (Ocean Observation Systems). (4) (cross-reference Section 2)

- Develop a statewide ocean and coastal research and outreach strategy with clearly stated priorities for California. (4)

- Develop new watershed-scale models that can be much more complex than the models traditionally used for managing point source pollution. (5) (cross-reference Section 7)

- Develop assessment tools that can make more reliable connections between observed levels of pollutants and actual ecological impacts. (5)

- Expand the assessments of the impacts of upstream features such as debris basins and channelization on sediment budgets. (5)

- Develop a strategy outlining the identification, protection and restoration of critical habitats in watersheds and nearshore marine environments. (7)

- Develop a "Living Observation System" to quantify how critical coastal ecosystems are responding to natural and human drivers. (7)

- Determine the socioeconomic impact of fisheries management policies. (5)

- Develop socioeconomic and market assessments of the fishing industry in this region. (Interview)

- Develop a socioeconomic analysis of the potential for increased marine ecotourism in Humboldt Bay. (Interview)

- Analyze the potential for increasing aquaculture operations in Humboldt Bay. (Interview)

- Coastal Pollution; Water and Sediment Quality (7)
    - Determine the impacts of non-point source and storm water pollution,
    - Develop baseline health indicators,
    - Identify sources of pollutants,
    - Assess risks for emerging contaminants,
    - Develop sediment management strategies and eco-toxicology,
    - Gather socioeconomic data, and
    - Evaluate effectiveness of non-point source and storm water pollution control technologies.

- Increase funding for equipment and travel for marine mammal surveys. (Interview)

- Develop a Coastal Observation and Seabird Survey Team for this region. www.coasst.org. (Interview)

- Increase funding for research on the Eel River estuary. (Interview)

- Implement research and monitoring on the impacts of the application of fishery management tools such as the groundfish trawl buyback and closed areas on the shelf and slope to impacted communities. (Interview)

Data Gaps and Limitations Specific to The Nature Conservancy's Ecoregional Assessment (13)

The ecoregional assessment relied primarily on large readily available datasets that allowed TNC to map the distribution of targets over the entire region. Based on the datasets and approach used, there were several data gaps or data limitations that should be considered important sources of uncertainty at the scale of the ecoregional assessment: [many of these gaps are consistent with the terrestrial synthesis.]

- **Lack of Mapped Data for Some Important Targets:**
  Hydrographic features: Persistent fronts, eddies, and offshore jets are important hydrographic features that influence regional productivity, recruitment patterns, and the movement and distribution of many species.

  Marine Fish: Data on the occurrence and distribution of most marine fish species has not yet been compiled in a spatial format.

  Native shellfish: Two groups of native shellfish were considered potentially important targets because of their role in creating habitat structure that supports many other species. The native Olympia oyster, Ostrea lurida , ranges from Alaska to Baja California and was formerly common in NCME bays and estuaries. They were the target of commercial harvest and culture through the early 1900s; their natural populations have been greatly reduced by harvesting, pollution, and habitat alteration (USFWS and US ACOE 1989). At this time, information on the distribution of native oysters in California bays and estuaries has not been compiled.

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- **Lack of validation of the benthic habitat model.**
  The accuracy of the benthic model (ie. whether a predicted habitat type is really present) has not been validated. A sampling effort to validate the model and correlate at least a subset of types with other measures of biodiversity would add value to the assessment. More refined benthic mapping statewide, especially in near-shore areas, would be very useful for conservation planning.

- **Need for improved viability assessment.**
  Developing quantitative criteria and the data to support an evaluation of viability for all marine target occurrences would improve the assessment.

- **Lack of information on regional threats.**
  Spatial data on marine threats is generally lacking. Both a regional assessment of threats to marine biodiversity and more site-specific information is needed to better identify the conservation areas that are most highly threatened. TNC's site planning approach, known as the 5-S framework, will be used to assess threats at selected action areas in the future. The 5-S framework (Low 2003) can be used to identify key systems (conservation targets and the attributes that maintain their viability), stresses (types of destruction, degradation or impairment threatening those systems), sources (agents generating the stresses), strategies (activities employed to abate threats), and measures of success (measures of biodiversity health and threat abatement).

- **Lack of spatial socioeconomic data.**
  The importance of understanding socioeconomic conditions and marine resource use patterns for developing appropriate conservation strategies is widely recognized; however, the compilation of spatial data related to human use of or impacts on marine resources has not kept pace.

5. Outreach/Education

- Develop a statewide ocean and coastal research and outreach strategy with clearly stated priorities for California. (4)

- Improve the use of existing scientific information by creating a mechanism or institution that regularly provides independent scientific oversight of ocean and coastal management. (1)

- Broaden ocean education and awareness through a commitment to teach and learn about our oceans, at all levels of society. (1)

- Improve ocean-related education through coordinated and effective formal and informal efforts. (2)

- Form collaborative partnerships with not only those providing K-12 and collegiate formal education, but also with institutions, organizations, and governmental agencies providing informal education opportunities for preschoolers to senior citizens, including the underserved minorities. (4)

- Launch an ocean and coastal stewardship media campaign by working with members of government, academia, industry and non-governmental organizations. (4)

- Support outreach to help coastal communities manage coastal resources through local and regional planning, and to promote a vibrant economy, clean environment and involved citizenry. (8)

6. Government Policies/Regulations

- Establish regional ocean ecosystem councils to develop and implement enforceable regional ocean governance plans. (1)

- Institute effective mechanisms at all levels of government to manage development and minimize its impact on coastal ecosystems. (1)

- Increase efforts to pursue, support, implement, and establish long-term funding for coordinated ecosystem management approaches at the federal, state, and local levels to guide and improve the stewardship of ocean and coastal resources. (4)

- Adapt existing marine and coastal management frameworks to ecosystem concepts, as well as to larger spatial and longer temporal scales. (5) (7) (9)

- Consider the issue of sea level rise in the development of beach erosion policies. (5)

7. Ocean Protection

- Develop an action plan to address nonpoint source pollution and protect water quality on a watershed basis. (1) (11) [consistent with terrestrial synthesis which identified gap of recommendation to protect and restore water quality flowing into estuaries, bays, lagoons, and sensitive habitats]

- Revise, strengthen, and expand pollution laws to focus on nonpoint source pollution. (1) [consistent with terrestrial synthesis which identified gap of recommendation to protect and restore water quality flowing into estuaries, bays, lagoons, and sensitive habitats]

- Address unabated point sources of pollution. (1)

- Create a flexible framework to address emerging and nontraditional sources of pollution, such as invasive species and noise. (1)

- Set measurable goals for reducing water pollution, particularly from nonpoint sources, and strengthen incentives, technical assistance, enforcement, and other management tools to achieve those goals. (1)

- Assist in reducing coastal water and sediment contamination in the marine environment to protect ecosystem and human health; improve coastal water quality to protect ecosystem and public health and the prosperity of communities whose economies rely on coastal tourism, recreation, fishing and other coastal-dependent uses. (8) [consistent with

terrestrial synthesis which identified gap of recommendation to protect and restore water quality flowing into estuaries, bays, lagoons, and sensitive habitats]

- Develop plans and projects that measure and decrease the levels of pollution for the watersheds feeding into Humboldt Bay. (Interview)

- Increase funding for research focused on assessing sediment load throughout the Needs Assessment region, funding for dredge disposal and prioritizing dredge disposal areas for restoration. (Interview)

- Increase funding for research on stormwater runoff infrastructure needs and improvements. (Interview)

- Research on total suspended sediment load arriving in Humboldt Bay from the watersheds. (Interview)

- Identify funding to continue CICORE (Center for Integrative Coastal, Observation, Research and Education) work. cicore.humboldt.edu. (Interview)

- Identify and protect essential fish habitat. (3)

- Develop networks of marine protected areas (MPAs) as a tool to protect key habitats, manage fishing effort, and help rebuild at-risk stocks. (5)

- Increase the implementation of existing conservation planning documents. And utilize existing plans to lessen the amount of resources needed for developing new plans. (Interview)

The table below shows a comparison of site-specific recommendations between The Nature Conservancy's Northern California Marine Ecoregional Assessment and the California Coastal Commission's Critical Coastal Area Plan.

Table 1. Comparison of TNC and CCA site recommendations.

TNC Site	CCA Site	County	MLPA Site
NCC-2		Del Norte – offshore	
Smith River – Point St. George		Del Norte	
NCC-3		Del Norte – offshore	
Klamath River	Klamath River	Del Norte	
NCC-5		Del Norte – offshore	

TNC Site	CCA Site	County	MLPA Site
	Redwood National and State Parks Water Quality Protection Area	Humboldt	
Humboldt Lagoons	Redwood Creek	Humboldt	
	Kelp Beds at Trinidad Head Water Quality Protection Area	Humboldt	
Humboldt Bay /Estuary Complex	Mad River	Humboldt	
Eel River Estuary	Eel River	Humboldt	
Cape Mendocino	Mattole River	Humboldt – some offshore	Punta Gorda State Marine Reserve.
Offshore Mendocino Escarpment		Mendocino – offshore	
Delgada – Spanish Canyons		Mendocino – offshore	
Vizcaino Canyon		Mendocino – offshore	
Cape Vizcaino		Mendocino	
		Mendocino	MacKerricher State Marine Conservation Area.
		Mendocino	Point Cabrillo State Marine Conservation Area.
		Mendocino	Russian Gulch State Marine Conservation Area

TNC Site	CCA Site	County	MLPA Site
		Mendocino	Van Damme State Marine Conservation Area.
		Mendocino	Manchester and Arena Rock State Marine Conservation Area.
	Pudding Creek	Mendocino	
Noyo River and Canyon	Noyo River	Mendocino	
	Pygmy Forest Ecological Staircase Water Quality Protection Area	Mendocino	
Big River - Albion-Navarro Rivers	Big River	Mendocino	
Albion River	Albion River	Mendocino	
Navarro River	Navarro River	Mendocino	
Point Arena	Garcia River	Mendocino	
	Kelp Beds at Saunders Reef Water Quality Protection Area	Mendocino	

Final Conclusions:

One cross-cutting theme that has emerged in answer to the question "Do we need more marine conservation planning?" has been the public's general response of not being sufficiently aware of existing planning efforts to give an informed answer to that question. Therefore another recommendation for next steps would be to develop mechanisms that would increase the public's ease of accessibility to existing marine conservation planning information. This is true for terrestrial planning as well.

The information presented in this document is mostly on scale larger than the focus of this assessment project. A detailed gap analysis and mapping of existing and proposed protection measures in the region scale of coastal Del Norte, Humboldt and Mendocino counties would help to develop the necessary cohesive vision for development and implementation of a regional strategic coastal conservation plan.

And finally, issues that link terrestrial and marine ecosystems have not been addressed in a focused, comprehensive manner for this region. These linkages need to be more clearly identified and assessed. One significant linkage is the flow of freshwater, containing sediments and pollutants, through watersheds to the nearshore marine environments. This issue may offer a tangible starting place for quantifying a terrestrial/marine ecosystem linkage and presents the opportunity to take a more ecosystem-based approach to conservation issues in these environments.

SYNTHESIS OF SELECTED TERRESTRIAL PLANNING DOCUMENTS

Introduction

The Linking Land and Sea: A Northern California Coastal Conservation Needs Assessment seeks to understand the needs of organizations working to conserve coastal resources both on the land and in the ocean. To be successful in protecting and restoring the rich coastal resources of northern California, we need to better understand how our activities affect the land-to-sea continuum and to search for opportunities to connect conservation priorities across the land-sea margin. "Sustainability of coastal communities and economies depends upon successfully integrated management across the several systems that comprise coastal biomes." (Society for Conservation Biology, 2006)

The goal of Linking Land and Sea is to assess and document the specific needs, including capacity building, of conservation organizations for regional strategic coastal (marine and terrestrial) conservation planning and implementation in Mendocino, Humboldt, and Del Norte Counties. The project has three components:

1. Assessment of the needs of coastal conservation organizations via regional workshops, surveys, and focused interviews.
2. Identification of coastal conservation planning needs. Is there a need for more planning? And, if so, what type of planning?
3. Synthesis of existing coastal conservation plans both marine and terrestrial, with a focus on marine.

This document represents the third component, a review and summary of the existing marine and terrestrial coastal conservation planning efforts relevant to Northern California. While there are a great many terrestrial conservation plans, little is known about coastal marine conservation plans that specifically address the north coast region. Thus, more time was allocated to researching and synthesizing marine plans. A separate summary of existing marine plans was produced as part of the Linking Land and Sea needs assessment and is included as Appendix E of the needs assessment final report.

Methodology

There are over 100 existing plans or studies that evaluate some aspect of the terrestrial natural resources and conservation opportunities in Mendocino, Humboldt and Del Norte counties (the North Coast). These include watershed-based plans; official agency or government resource plans; single species conservation plans; community and county land use plans; local coastal plans; and property specific plans. These plans contain a wealth of information and are guiding numerous conservation efforts at a variety of scales. These recent efforts to assess regional conservation priorities have pulled together the existing data, information and recommendations from the myriad of existing plans to "…develop a regional perspective and provide a basis for implementing comprehensive conservation programs that address the many complex and compelling conservation opportunities on the North Coast." (The Conservation Fund, 2005)

Methodology (continued)

We have reviewed the following assessments and compiled findings and recommendations that specifically address coastal conservation and the land-to-sea continuum:

1. *CONSERVATION PROSPECTS FOR THE NORTH COAST: A Review and Analysis of Existing Conservation Plans, Land Use Trends and Strategies for Conservation on the North Coast of California* (The Conservation Fund, August 2005). The document can be found at www.**coast**alconservancy.ca.gov/Programs/pandp.htm. The Conservation Fund synthesized seven plans (listed below) that were judged to be sufficiently similar in scope, quality and currency that they could be integrated into a comprehensive overview of the conservation priorities, opportunities and constraints for some portion of the region:

    California North Coast Ecoregion Aquatic Conservation Strategy Recommendations (The Nature Conservancy of California, Fall 2003).

    California North Coast Ecoregional Plan (The Nature Conservancy of California, June 2001).

    Completing the California Coastal Trail (California State Coastal Conservancy, January 2003).

    Mendocino County Coastal Conservation Plan (Mendocino Land Trust, April 2003).

    A GIS-Based Model for Assessing Conservation Focal Areas for the Redwood Ecoregion (Conservation Biology Institute and Save the Redwoods League, 1999).

    Recovery Strategy for California Coho Salmon (California Department of Fish and Game, 2004).

    Strategic Plan Update (Pacific Coast Joint Venture, 2004).

2. *Working Toward a Humboldt - Del Norte Conservation Vision: Identifying Regional Conservation Priorities* (The Nature Conservancy, 2006). In 2005 The Nature Conservancy, Save-the-Redwoods League, and the North Coast Regional Land Trust brought together public and private conservation partners in a series of workshops designed to identify conservation target systems, stresses, sources of stress, and strategies for the region. TNC lead the workshops utilizing the Efroymson process, a conservation planning process that has been successful in over 300 locations worldwide. This document is a reporting of the results of these workshops. This document can be found at conserveonline.org/docs/2005/12/ Humboldt Del%20Norte%20Conservation%20Vision%20Map.pdf

Methodology (continued)

3. *Northern California Marine Ecoregional Assessment* (The Nature Conservancy, 2006). This Assessment covered a region from the Oregon California border to Point Conception and identifies a portfolio of conservation areas that represent the diversity of estuarine, nearshore and offshore habitats. This is the only assessment that crosses the land-sea interface. A total of 17 marine and estuarine portfolio conservation areas were delineated within the area of interest of the Linking Land and Sea Needs Assessment. While the ultimate goal is the protection of the entire portfolio, a preliminary and qualitative assessment of threats and opportunities in the ecoregion was used to identify priority action areas. No strategies were identified for conservation at the individual sites. This document can be found at conserveonline.org/workspaces/ecotools/Std7CaseStudies/Standard%207%20PNWC%20offshore.pdf

Each of these documents contains detailed information about the region, its resources, threats to those resources and opportunities for conservation. They are worthy of review by anyone interested in furthering coastal conservation on the North Coast.

The regional and site-specific strategies, goals, visions, objectives, and recommendations focusing on coastal conservation and the land-to-sea continuum from these assessments are summarized here, organized into the following categories:

- Collaboration/Partnerships/Private Landowners
- Planning/Strategies
- Restoration/Enhancement
- Outreach/Education
- Government Policies, Regulations, Land Use Planning
- Land Protection/Acquisition/Easements
- Public Access

Within each category there are region-wide recommendations followed by more site-specific recommendations (Note: each recommendation is followed by a number corresponding to the assessment that it came from).

The site-specific recommendations are organized by Hydrologic Units ("HUs") within the study area as per the format of the *Conservation Prospects for the North Coast.* Organizing the recommendations in this manner allowed for determination of gaps and identification of opportunities for both the category and the geographic area.

The nine HU's start in the north of the region at the Smith River and go south to the Mendocino Coast. The HU's from north to south are (Figure 1):

- Smith River – (450,477 acres, 704 mi^2), the Smith River's three main tributaries flow from the forested highlands of the Coast Ranges toward a broad agricultural floodplain and complex tidal estuary just south of the Oregon border. The HU also includes two of the largest wetland and migratory bird habitats in the North Coast, the brackish Lake Tolowa and nearly fresh Lake Earl.
- Lower Klamath River HU - (318,363 acres, 497 mi^2), includes 40 miles of the Klamath River from the confluence of the Salmon River to the Pacific Ocean.
- Redwood Creek HU – (187,853 acres, 294 $mi^{2)}$, Redwood Creek's lower basin, as well as its Prairie Creek tributary, is public parkland managed by Redwood National and State Parks.
- Trinidad HU – (83,771 acres, 104 mi^2) includes some of the most significant coastal lagoons on the North Coast - Freshwater, Big, Dry, and Stone lagoons. Also includes the Little River drainage and coastal streams from Strawberry Creek north to Freshwater Lagoon.
- Mad River HU – (322,199 acres, 503 mi^2). BLM and the USFS manage 36 percent of the watershed. Half of the remaining land is in private ownership, and half of this is owned by two timber companies. Gravel mining operations are present on the lower Mad as it approaches the coastal plain.
- Eureka Plain HU – (141,190 acres, 221 mi^2) contains redwood forests, prime agricultural lands, and riparian and wetland habitat leading to the tidal marshland of the bay. The 16,000-acre Humboldt Bay is the largest estuary between San Francisco Bay and Coos Bay, Oregon.
- Eel River HU – (2,356,794 acres, 3,682 mi^2) the third largest river system in California, crossing six counties. The 33,000-acre Eel River delta is another of the North Coast region's significant wetland, riparian, and agricultural resource.
- Cape Mendocino HU – (319,663 acres, 499 mi^2): Mattole River, Bear River, and Oil Creek. Nearly all of the 70,000 acres of public ownership in the HU are by BLM, mostly as part of the King Range National Conservation Area (KRNCA). KRNCA is home to the famed "Lost Coast," a 35-milelong stretch of the most pristine and undeveloped coastline in California.
- Mendocino Coast HU – (1,023,175 acres. 1,599 mi^2), the HU includes seven major river basins — the Ten Mile, Noyo, Big, Albion, Navarro, Garcia, and Gualala rivers — with numerous smaller streams also draining directly to the Pacific Ocean.

Once the recommendations from the 3 assessments were categorized in this way existing gaps could be more easily determined. The gaps were identified based on knowledge and expertise of the planning and advisory teams, input gathered from the needs assessment meetings, questionnaires and surveys.

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS by Category

Collaboration/Partnerships/Private Landowners

In Mendocino and Humboldt counties, 82 and 69 percent of each county area, respectively, is in private ownership. Del Norte County has the lowest percentage of private land — just 23 percent — with much of the public land in Six Rivers National Forest (U.S. Forest Service). (The Conservation Fund, 2005)

Regional Recommendations

- Further develop and maintain partnerships with key landowners, organizations and agencies to bolster successful protection of nodes, corridors, natural areas and working landscapes (2).

- Work with private landowners to develop best management practices for working landscapes, forests, ranches, dairies, and farmlands. Provide incentives and technical assistance to landowners for this purpose (2).

- Promote cooperative management among agencies and private landowners in tidal and estuarine flats under multiple managements (2).

- Develop and support local programs that are committed to well planned and strategic long-term efforts to protect areas with high coastal resource values (1).

- Develop public and private philanthropic loan programs, like the State Revolving Fund, that provide long-term, low interest loans to non-profit and private landowners to establish and maintain working landscape projects (1).

Recommendations by Hydrologic Unit

Del Norte County/Smith River HU

Collaborate with private landowners to protect habitat and resolve management issues at Lake Earl (1).

Humboldt County/Trinidad HU

Pursue cooperative management agreements with private landowners near McDonald Creek to protect wetland and wildlife values in McDonald Creek and Stone Lagoon (1).

Pursue cooperative management agreements with private landowners to protect, restore, or enhance wetland and wildlife values at the Little River estuary (1).

Humboldt County/Mad River HU

Pursue cooperative management agreements with Humboldt County and the California Department of Transportation for protecting estuarine habitat values, as well as local landform stability for the lower Mad River (1).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Humboldt County/Eureka Plain and Eel River HU (continued)

Pursue cooperative management agreements with the McKinleyville Community Services District and Humboldt County to protect estuarine habitat values and other in-stream values in the estuary and local creeks as development occurs in McKinleyville (1).

Humboldt County/Eureka Plain HU

In cooperation with willing landowners, restore and maintain historical tidal areas, backwater channels, and salt marsh in Humboldt Bay (1).

Humboldt County/Eel River HU

Where feasible and appropriate, work with public agencies and individual landowners to address excessive erosion upstream in the watershed, in order to reduce impacts on Eel River delta wetland and wildlife values (1).

Mendocino County/Mendocino Coast HU

Work with agricultural landowners to create riparian easements along the Point Arena plain and headland, Alder and Brush creeks, the Garcia River, and the Gualala River estuary (1).

Enhance wildlife habitat through cooperative efforts with private landowners and DPR along the Point Arena plain and headland, Alder and Brush creeks, the Garcia River, and the Gualala River estuary (1).

Planning/Strategies

Regional Recommendations

Facilitate protection of functional landscapes throughout the region by working with local governments, planners, and developers to plan well-designed open space, set-asides, mitigation, and growth management, including support for the following: Humboldt County General Plan Update; and public funding for open space through state bond issues, and local funding initiatives. (2)

Recommendations by Hydrologic Unit

Humboldt County/Trinidad HU

Develop a **plan** to improve the functioning of the lower Little River estuary, reestablishing conifers and a functional floodplain and riparian zone on the lower river channel and reestablishing more complex instream habitat (1).

Humboldt County/Eureka Plain and Eel River HU

Work with federal, state, and local agencies, conservation groups, the agricultural community, and others to develop a long-term, comprehensive **plan** for the restoration, enhancement and protection of Humboldt Bay and the Eel River delta (1).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Planning/Strategies

Humboldt County/Eureka Plain and Eel River HU (continued)

In cooperation with agencies and landowners, **plan** to reestablish estuarine functions and to restore and maintain historical tidal areas, backwater channels and salt marsh in Eel River Delta (1).

Support the establishment of Humboldt Bay – Eel River Estuary as National Estuarine Research Reserve (1).

Mendocino County/Mendocino Coast HU

Support the Mendocino Land Trust (MLT) and Department of Parks and Recreation (DPR) in developing a long-term monitoring and management **plan** for the Big River estuary and the adjacent forested lands.(1)

Restoration/Enhancement

Regional Recommendations

- Protect and restore coastal (forests, prairies, scrub), estuarine (marsh, eelgrass, estuaries and lagoons), and beach and dune systems in intact functional landscapes that allow for natural processes, provide habitat for coastal/estuarine dependent species, and provide critical linkages between terrestrial/aquatic/marine environments (2).

- Protect and restore coastal estuaries and lagoons (particularly the most threatened components such as salt marsh, brackish marsh, and eelgrass beds) and the ecological processes needed to sustain them (freshwater inputs, tidal exchange, etc.) (2).

- Protect and restore coastal dunes and beaches that provide important habitat for threatened plants, shorebirds, and other species (2).

- Maintain and restore important linkages between marine, estuarine, aquatic and terrestrial systems that are important for estuarine-dependent species such as salmonids, shorebirds, waterfowl, and native shellfish (2).

- Promote riparian and estuarine restoration projects where feasible, in particular ones aimed at reestablishing natural estuarine channel function and riparian overstory canopy (2).

- Reduce invasives in coastal marsh habitat and reduce additional invasions through monitoring, removal, and restoration (2).

- Develop regional restoration plan with thorough mapping of invasives and native dune communities to prioritize sites for native dune restoration (2).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Restoration/Enhancement

Regional Recommendations (continued)

- Restoration of critically imperiled ecosystems and species such as coastal marshes; intertidal estuaries, eelgrass beds, native oyster beds, and salmonids; potential funding is available from the NOAA Community-based Coastal Restoration Program (3).

- Restoration of coastal streams for anadromous fish through removal of barriers and enhancement of spawning habitat for salmonids (3).

Del Norte County/Smith River HU

Restore and enhance floodplain riparian forests in the lower Smith River delta (1).

Humboldt County/Redwood Creek HU

Work with landowners to restore the historic form and function of the Redwood Creek estuary and lagoon and slough channels, riparian forests, and adjacent wetlands. This includes providing for unconfined channels, natural drainage patterns from adjacent wetlands, improvement of estuarine slough and tributary conditions (in Strawberry, Dorrance and Sand Cache creeks), and\restoration of riparian vegetation, tree cover, wetlands, and off-channel and rearing habitat (1).

Humboldt County/Trinidad HU

Restore and enhance wetland and wildlife values on public lands in or adjacent to Little River, especially floodplain riparian forest (1).

Humboldt County/Mad River HU

Restore and enhance wetland and wildlife values on public trust lands in and adjacent to the lower Mad River, especially floodplain emergent wetlands, floodplain riparian forests, and instream habitat (1).

Humboldt County/Eureka Plain HU

Enhance wetland habitats and wildlife values on publicly owned wildlife areas managed by Department of Fish and Game (DFG) (1).

Work with the city of Eureka and individual landowners to restore/enhance wetland and wildlife values in the Eureka Marsh/PALCO wetland complex, the West End Road wetland complex and other wetlands within the city (1).

Work with the County of Humboldt and individual landowners to enhance existing freshwater wetland values in the Fields Landing/King Salmon area and on the North Spit (2).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Restoration/Enhancement

Humboldt County/Eel River HU

Restore tidal action to diked wetlands, where feasible and appropriate, to enhance wetland and wildlife values as well as estuarine volume (1).

Work with the Humboldt County Resource Conservation District to restore and enhance wetland functions, including habitat values and tidal flushing, in the Salt River watershed (1).

Restore and enhance wetland and wildlife values, especially floodplain riparian forest, riverine pools, and the estuary, in public trust lands in the Eel River delta (1).

Studies/Research/Data

Regional Recommendations

Determine information gaps related to the TNC conservation targets and fill them as needed to successfully plan for and implement conservation projects in Humboldt Bay, and coastal systems (2).

Mendocino County/Mendocino Coast HU

Study the Garcia River estuary using the Garcia River Estuary Enhancement Feasibility Study, as well as new information, to consider restoring estuarine functions that would benefit coho salmon (1).

Outreach/Education

There were no regional or site specific recommendations in these three documents related to outreach and education.

Government Policies, Regulations, Land Use Planning

Regional Recommendations

Facilitate protection of functional landscapes throughout the region by working with local governments, planners, and developers to plan well-designed open space, set-asides, mitigation, and growth management (2).

Support and establish public funding for open space through state bond issues and local funding initiatives (2).

Humboldt County

Support for the Humboldt General Plan Update (2)

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Government Policies, Regulations, Land Use Planning

Humboldt County/Redwood Creek HU

Work with the US Army Corps of Engineers, Redwood National and State Parks, and the Humboldt County Planning Department to modify levee maintenance manuals to be consistent with habitat requirements of coho salmon while maintaining flood control (1).

Humboldt County/Trinidad HU

No recommendations were found for this HU

Humboldt County/Eureka Plain HU

Work with local, state, and federal agencies to ensure that mariculture activities are compatible with wildlife values within tidelands of Humboldt Bay (1).

Work with Humboldt County and the cities of Eureka and Arcata to ensure that wetland and wildlife values are protected as development occurs, particularly in the Martin Slough/Elk River, Freshwater Creek, Jacoby Creek, and Janes Creek drainages and on the North Spit (1).

Work with the Humboldt Bay Harbor, Recreation, and Conservation District to assure that wetland and wildlife values are protected on public trust lands as development occurs within improved harbor areas (1).

Mendocino County/Mendocino Coast HU

Support state park actions to provide protection to Ten Mile Beach for wintering and nesting western snowy plovers and rare plant populations (1).

Monitor the permitting and operation of commercial fishing mariculture to ensure the protection of eelgrass beds at the mouth of the Navarro (1).

Support retention of current zoning to protect existing habitat values and to protect agricultural lands from more intensive development along the Point Arena plain and headland, Alder and Brush creeks, the Garcia River, and the Gualala River estuary (1).

Land Protection/Acquisition/Easements

Regional Recommendations

- Protect key properties in the North Coast through fee acquisition, conservation easements, and/or limited development (2).

- Evaluate opportunities to acquire land and/or conservation easements from willing sellers on wetland, estuarine, and tideland areas within in the region (2).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Land Protection/Acquisition/Easements

Regional Recommendations (continued)

- Move quickly to establish "working landscape" conservation management on large, strategically located forest and agricultural properties in resource rich watersheds in Humboldt, Mendocino, and Del Norte counties (1).

- Focus other fee or easement acquisitions on unique resources that are essential to conserving high priority coastal resources, such as remaining old-growth redwood forest stands, coastal estuaries and floodplains within important coho salmon refugia watersheds, and California Coastal Trail segments (1).

Del Norte County/Smith River HU

Prevent the development of properties in the Lake Earl floodplain and Smith River Delta through acquisition of fee or easements from willing sellers, to support natural flood and estuary processes (1).

Provide roosting for water-associated birds by acquiring forested areas adjacent to Lake Earl and Lake Tolowa from willing sellers (1).

Acquire and enhance wetland areas from willing sellers in the Elk Creek wetland complex, the Crescent City marshes, and south of Point St. George (1)

Humboldt County/Trinidad HU

Acquire additional shoreline and wetland acreage from willing sellers to consolidate public ownership, especially of wetlands east of Highway 101 at Big Lagoon (1).

Acquire land along the Little River from willing sellers for restoration or enhancement purposes (1).

Humboldt County/Eureka Plain HU

Implement the existing U.S. Fish and Wildlife Service plan for acquisition and management of lands with the approved boundary of the Humboldt Bay National Wildlife Refuge (1).

Humboldt County/Eel River HU

Support the acquisition of conservation easements in the lower Eel as an incentive for landowners to conserve and enhance habitat (1).

Mendocino County/Mendocino Coast

Acquire fee and/or easements to protect the Elk Creek estuary (1).

SYNTHESIS OF GOALS, RECOMMENDATIONS, ACTIONS (continued)

Coastal Access

A complete assessment of coastal access priorities for the region is documented in the *Completing the California Coastal Trail* report (California State Coastal Conservancy, January 2003). These same priorities were later adopted into the Conservation Prospects for the North Coast. For this synthesis, only those coastal access projects that are located in the coastal zone, or specifically connect terrestrial and marine resources (trails from inland to the coast) are presented.

Recommendations by Hydrologic Unit

Del Norte County/Smith River HU

Design and build multi-use trails across Point St. George headland, connecting Crescent City with Tolowa Dunes State Park (1).

Complete pedestrian and bicycle improvements in Crescent City Harbor Trail Study (1).

Humboldt County/Trinidad HU

Connect the Hammond Trail from Scenic Drive to Clam Beach County Park (1).

Humboldt County/Eureka Plain HU

Support the implementation of the Humboldt Bay Trails Feasibility Study to develop a continuous trail system around the east side of Humboldt Bay (1).

Work with private landowners to acquire public access rights from willing sellers at several locations from Centerville Beach to Cape Mendocino (1).

Mendocino County/Mendocino Coast

Work with private landowners to acquire (1):

- Fee and/or easements to protect agricultural, biological and scenic resources identified in the Mendocino County Coast Conservation Plan in and around the Ten Mile estuary, as well as between Point Arena and Manchester.
- Public access rights and improve a trail corridor connecting Usal Road and Westport-Union Landing State Park
- Coastal Trail access easements along the Usal Creek/Rockport coastal terrace
- Public Rockport Beach access, as well as biological and forest resource easements.
- Public access rights along the bluffs from Albion Cove and the Albion Headlands
- Public access rights and improve a trail corridor connecting Manchester State Beach and the Point Arena Pier
- Easements to secure a looped public trail system around Fort Bragg.
- Easements to secure a trail or wildlife corridors between parks and preserves in the Caspar Creek, Little River, and Albion watersheds.

Secure better beach access at the Elk Creek estuary (1).

With landowners design a public trail from Navarro River State Park to and along the Navarro beach headlands (1).

REGIONAL GAPS IDENTIFIED BY CATEGORY

After careful review of the existing recommendations, above, regional gaps in information and recommendations were determined. This was done using expert opinion from the Linking Land and Sea planning and advisory teams, information gathered from the needs assessment survey and questionnaire, and gaps identified within the three regional plans described above. Gaps specific to Hydrologic Units were not identified as this was beyond the scope of this project.

Collaboration/Partnerships/Private Landowners

Regional Gaps

1. While there are a lot of recommendations regarding working with or in partnership with private landowners there are no recommendations on how to make these partnerships work for the landowner. There is a lack of analysis regarding how to make conservation of coastal resources on private lands economically viable/desirable for the landowner either through better incentives or development of niche markets related to "green" products Throughout the Pacific Northwest there are a number of successful projects that build on the organic foods market idea, that is that consumers are willing to pay more for products that are "friendly" to the environment. Wines that utilize viticulture techniques that protect riparian areas and reduce water consumption are now marketed with a "fish friendly" seal. There is also a lack of specific criteria for prioritizing which landowners specifically to work with (size of property, location, types of resources etc.) on conservation projects.

2. There are very limited recommendations related to collaboration or cooperation with tribes. This is a significant gap for this region as tribal entities are actively involved with numerous coastal conservation issues and projects; have been stewards of these resources for thousands of years; hold historic and place-based knowledge; and maintain sacred connections to sites both on land and sea. The connection of people to the land is key to future conservation and the tribes have that connection.

3. Recommendations for collaboration and partnerships with resource user groups other than landowners are lacking. This includes fisherman, water districts, developers, recreational groups etc.

4. Environmental groups, smaller non-profits, and watershed groups are not specifically mentioned in recommendations and goals in these plans. Yet they often do the bulk of the implementation and protection work in the region. Because of the large number of these types of groups it would be unwieldy to mention them all, and establishing partnerships with larger organizations makes sense on a regional basis. However at the site specific, local watershed scale it is necessary to work with these types of organizations and to support their continued existence. There is a good database of

existing groups in the Conservation Prospects document, and the Linking Land and Sea project has added to and updated this list.

REGIONAL GAPS IDENTIFIED BY CATEGORY

Collaboration/Partnerships/Private Landowners (continued)

5. Improving communications and coordination among conservation groups, agencies, landowners, land managers, restorationists and individuals was not specifically noted in the plans. It is difficult for these diverse organizations to keep track of land use changes (acquisition, easements) and the numerous projects that are being planned for, designed, permitted, and implemented. There are often times when chances are missed to join projects together to make them more effective and efficient. Coordinated resource planning groups do exist in the region and should be looked to as one option for better coordination of efforts (such as Pacific Coast Joint Venture, Humboldt Dunes Forum, Smith River Coalition).

6. Cooperation and collaboration between government entities (local, state, federal) and within government entities is needed throughout the region. There are recommendations in the plans reviewed that identify the need for cooperative management between agencies, but there is also a need for coordination within agencies, especially those that have multiple divisions. Improving coordination between divisions within government agencies (eg between regulatory branch and the habitat branch) would be helpful for land managers and implementing organizations.

7. Recommendations for coordination or collaboration that specifically addresses the land-to–sea continuum do not exist.

8. Regional prioritization plan for coastal conservation projects.

Planning/Strategies

Regional Gaps – there were no region wide recommendations for plans or strategies.
Based on the review of the existing assessments and stakeholder input the following would be useful.

1) The existing regional terrestrial plans/assessments do a good job of integrating information from a diversity of sources and from other existing plans/assessments. Once these and other conservation and management documents have been completed there is a need to do a more comprehensive and coordinated outreach effort to help people to utilize them. The planning effort is often deemed complete once the written document is printed. However, many people, including those who work in the Northern California conservation field, do not know what plans are out there, what they include, or how local projects may contribute to the recommended actions. More education regarding existing plans in needed. An ongoing system to catalogue, summarize, organize and query existing plans would be very useful. The most recent catalogue

of plans/assessments for the region can be found in The Conservation Fund's *CONSERVATION PROSPECTS FOR THE NORTH COAST*. This catalogue is set up so that it can be queried by key words. This catalogue would be easy to update and is the most comprehensive for the region.

REGIONAL GAPS IDENTIFIED BY CATEGORY

Planning/Strategies (continued)

2) While most of the major watersheds (with the exception of the Mad River) have some type of plan, the small coastal watersheds are not well covered. These small coastal streams are important land-sea links.

3) Many of the existing coastal conservation plans need specific implementation strategies.

4) Regional models that forecasts trends are needed. What are the possible outcomes if certain trends continue – such as global warming, sea level rise, salmonid population decline, etc.

5) More in-depth analysis of economic and sociological parameters that influence land use decisions, community support for coastal conservation, resource allocations, would help conservation organizations to be more effective in their work.

Restoration/Enhancement

Regional Gaps – The existing plans have comprehensive recommendations regarding restoration priorities both on a regional scale and by hydrologic unit.

1) A recommendation to protect and restore water quality flowing into estuaries, bays, lagoons, and sensitive habitats is missing.

Studies/Research/Data

Regional Gaps – The existing plans used in this synthesis did not have many specific recommendations for new research or data acquisition. Based on the review of the existing assessments and stakeholder input the following would be useful.

1) Although there is a large amount of data and information regarding the region's terrestrial coastal resources, it is difficult to access because it is located in so many different places, in varied formats, and is hard to find (you have to know it exists first to be able to go looking for it). A centralized data system with spatial data, is needed. There are several systems that are all in some stage of development including Klamath Resource Information System (KRIS), California Cooperative Fish and Habitat Data Program (CalFish), Information Center for the Environment (ICE), Center for Integrative Coastal Observation Research and Education (CICORE). Each of these systems has a specific focus on types of

information, geographic location, or has yet to be filled with information. In addition, keeping the database up to date is difficult.

REGIONAL GAPS IDENTIFIED BY CATEGORY

Studies/Research/Data (continued)

2) A statewide data base on presence of salmonids in all coastal streams and reliable data on population abundance in coastal streams are not available (3). However, there is a current effort to develop this information being conducted by Stillwater Sciences.

3) Other data gaps include: Native shell fish distribution; benthic habitat mapping; regional threats for marine resources; ecological impacts of altered sediment regimes on coastal water bodies; impacts of non-point source (NPS) pollution such as stormwater runoff on rocky intertidal areas; wildlife corridors and connectivity; and ecological trends and baselines.

Outreach/Education

Regional Gaps - There are no outreach/education recommendations for the region in any of the assessments.

1) Outreach, education and interpretation are necessary to connect people to place and develop a sense of stewardship for coastal resources. If people can make an emotional connection to place they will support its conservation. We need more ways to connect to the environment, for example the numerous campaigns and education programs regarding the California Grey Whale has created a desire in the main stream population to protect this creature and its habitat.

2) There is a need for access to conferences, opportunities for peer learning, and focused coastal conservation educational opportunities.

3) Conservation organizations in the region need assistance with the development of interpretive materials and displays.

4) Because the population base in the region is small, and decisions concerning the region are often made by voters in large population centers there is a need to "market" the value of the north coast resources in population centers and with state decision makers.

Government Policies, Regulations, Land Use Planning

Regional Gaps – There are several recommendation for working with county governments to update general plans and local coastal plans; maintain current zoning for agricultural lands; strengthen regulations; and protecting open space.

1) There is a lack of funding for government staff to ensure that existing regulations are understood and followed. Enforcement of existing regulations needs to be improved.

REGIONAL GAPS IDENTIFIED BY CATEGORY

Government Policies, Regulations, Land Use Planning (continued)

2) Additional fiscal resources and staffing are needed to regularly update, and better implement and enforce Local Coastal Plans
3) The permitting process (and level of staffing) for work in the coastal zone needs to be updated to make the process, specifically the application process, more efficient and appropriate for the conservation measures desired.
4) Water quality policies need to include language that directly connects the coastal zone and drainages for terrestrial and marine resources.
5) There is a gray zone where land meets the sea in regards to regulations. There needs to be better coordination among jurisdictions so the lines and responsibilities are clearly understood.
6) Other needs include: permit assistance center, improved incentives for landowners and resource users, and a regional funding mechanism for conservation activities.

Land Protection/Acquisition/Easements

Regional Gaps – The existing plans identify a number of specific acquisition projects by hydrologic unit, and regional priorities.

1) Operation and maintenance resources for lands that are already in public ownership, or under management by conservation organizations are difficult to acquire and a major need. The level of tourist visitation to many coastal areas is increasing and the budgets available to meet the needs of so many visitors cannot be raised on a local level.
2) A local funding mechanism, such as an open-space district is needed for the region.

Coastal Access

Regional Gaps – there are no regional recommendations for coastal access in the 3 assessments we reviewed. However, the *Completing the California Coastal Trail,* (California State Coastal Conservancy, January 2003) contains numerous recommendations.

Integration of Terrestrial Plan Synthesis into Final Report

The results of this synthesis of existing regional terrestrial conservation plans for Del Norte, Humboldt, and Mendocino Counties will be analyzed along with the results of the Linking Land and Sea needs assessment survey and questionnaire, the marine plan synthesis, and expert input from the Planning and Technical Advisory Teams. Together these sources for identifying needs for coastal conservation will be integrated into the final report on results of Linking Land and Sea: A Regional Coastal Conservation Needs Assessment. .

Linking Land & Sea

A Northern California Coastal Conservation Needs Assessment

Del Norte County Meeting Summary

The following is a summary of meeting notes and questionnaire responses collected at the Del Norte County Linking Land and Sea meeting held at the Rural Human Services meeting room on March 14, 2006. The meeting was attended by 23 people. Twelve people completed a *Regional Coastal Conservation Planning and/or Implementation Questionnaire*. The results were summarized by Ruth Blyther, project consultant, and include input from the group discussion and questionnaires.

1. Do we need more regional coastal conservation planning?

Written responses (12 total):

Yes – 6 total. Three people noted that the need was for marine and five for connecting marine and terrestrial plans. Two people noted the need for more terrestrial planning.

No – 0 total.

Maybe – 4 total. One person noted there was maybe a need for both marine and terrestrial planning.

Not Sure – 2 total. One person noted that Del Norte organizations have not been involved in the regional planning or marine planning efforts that were presented to them. This includes The Conservation Fund and The Nature Conservancy assessment/studies.

Comments (from group discussion and questionnaire):

We need a better understanding of what plans currently exist, and how they link together and compliment each other. Integration and implementation of existing plans seems to be absolutely necessary. There is a need not for more planning but for more coordination. Hard to know – depends on type of plan – management or conservation? That depends on ecosystem, marine or terrestrial.

We need to know more about the existing plans that are out there (most of the participants agreed).

Depends on what type of planning – management or conservation, they are not the same. Management plans have not been good socially/economically, for example there are two different planning processes dealing with same resources and they are conflicting like the Lake Earl Management Plan

A. If we need more regional coastal conservation planning, then what type of planning is needed?

a) Marine Planning –

b) Terrestrial Planning -

c) Address Connection between Terrestrial and Marine
Six of the respondents noted this as a need.

Comments:
An obvious connection would be the coastal streams feeding Lake Earl coastal lagoon. Sea and shorebirds cross between these to biomes and are easy for people to connect with and care about.

d) Specify Regional Priorities
Five people noted this as a need on the questionnaire.

Comments:

The Smith River Anadromous Fish Action Plan is a good plan for the region for salmonids.

Coastal streams are not always identified in plans but they are sub-hydrologic units.

Need assessment of water quality and other parameters in coastal streams and Lake Earl lagoon. There is no Lake Earl/Coastal stream plan, we need to prepare a restoration plan for Lake Earl.

Del Norte County Local Coastal Plan update is currently in progress.

e) Implementation Strategies for existing plans
Six people noted this as a need on the questionnaire.

Comments:

Two people noted that it is a priority to make sure there are funds to implement existing plans.

Yes, this needs to happen. We have the California Coho Recovery Strategy and should implement its recommendations. Implement the Smith River Anadromous Fish Action Plan.

Coordinate all plans into one vision.

f) Other – We need plans that ….
Four people identified this as a need and provided input.

Comments:

We need plans that:

- Summarize what already exists and once an idea of what is out there is obtained, look at the need within Del Norte County. Conservation needs that are the result of local input should be the only ones given high priority.
- Recognize the need to educate the public as to why plans are needed and how they will benefit the community.
- Action that addresses the impact of human activity on wildlife (vehicle-induced injuries, monofilament, deliberate cruelty, etc)

B. Who would be the target audience for such a plan? Who would use it?

Four people responded to this question.

Government Agencies (1) -

Implementation organizations (2) – Restoration volunteers

Private property owners (3) - Landowners.

General Public (2) – Residents of the county being affected. "I believe the county and its citizens would use a planning document if it looked at a facts based assessment of the current baseline."

Other (3) – Commercial and sport fisherman.

2. Is there a need to integrate terrestrial and marine plans?

Six (50%) out of 12 people provided written response to this question, and all of them agreed that this is a need, although there was uncertainty about how it could be accomplished.

Comments:

Where do we start linking terrestrial with Marine? The audience wanted to hear feedback from the presenters. Jennifer Bloeser – Terrestrial planning is way ahead of marine planning. We need to work on bringing the detail and specificity of the marine planning up to match existing terrestrial plans and science.

Ruth Blyther – Linking terrestrial and marine has not been done in our region. Monterey has habitat mapping off shore so folks can see what the habitat offshore consists of and what is looks like. Habitat mapping for the marine environment is being done to the south but has not been prioritized for this region.

A. How could this be done?

Integrating the marine and terrestrial plans can be accomplished by thinking of it as merely one plan. To integrate the two ecosystems in a plan consider watershed links to estuaries, coastal streams, and commercial and recreational user groups. "It sure seems important for anadromous fish and all the ways they impact our ecosystems and economy." Look at where existing marine and terrestrial plans overlap.

3. What do you think are the most important gaps in existing coastal conservation plans?

Eleven people responded to this question (92%).

Comments:

Important gaps include:

- Good facts based assessment on baseline data associated with what exists currently, what is the use of the area, and what are the current needs of existing conservation areas.
- Is there any room to include wildlife rehabilitation centers? I deal with seabirds and shore birds, but also receive raptors and passerines which are transported out of the area.
- Addressing commercial interests and resource-based industry (marine and watershed-based.)
- Dissemination of knowledge, plans, information. Need a huge public relations, public information blitz. Awareness of what is in the plans is thin, maybe non-existent.
- Need a strong educational component, so people can see that they ultimately will benefit from conservation.
- We need to have a list of local plans being used in our county for review.
- We don't have one large vision that includes issues from all plans.
- Estuaries.
- Del Norte has a lot of public land but few or no conservation plans. I would certainly say the Lake Earl lagoon and watershed deserves a conservation/restoration plan, but it doesn't have one.
- Education. Sea and shorebirds are a very good way to connect people to the estuary, near shore and ocean environment. The wild bird rescue centers and their volunteers are already doing a lot of education, with very small resources.

4. Do we need more specific (local geographic focus or resource focus) plans within the region?

A total of 9 people responded to this question. (Yes, 9).

A. If so what specific focus would you like to see?

Geographic focus

- Del Norte County; Elk Creek estuary; Smith River; Smith River estuary; Lake Earl Lagoon; Crescent City Harbor; Klamath River watershed wetland conservation plan.
- Coastal streams action plan for the area between the Klamath River and Oregon border.
- Restoration plan for Lake Earl Lagoon, wildlife area and watershed and for Tolowa Dunes State Park.

Resource Focus

- Possibly include bird rehabilitation as mitigation for the creation of coastal bird trails. Need focus on education, and the wild bird rescue is a good vehicle for this.
- Summarize what is out there, see if there are needs, take the local temperature on such a synthesis, and find the funds if any "needs are identified.
- Conservation plans, ditch the bogus "multi-use plans". Conservation, preservation. Seventh generation kind of thesis.

5. We don't need more planning we need to focus on implementing the plans we already have.

A total of 11 people responded (92%). Strongly Agree, 3; Somewhat Agree, 1; Neutral, 5; Somewhat Disagree, 2; Strongly Disagree, 0

Comments:
Need to review what is out there to become more knowledgeable on the subject. Need for implementation and follow through. "Strongly agree if implementation means abandoning intrusive, recreational activities."

There is a lot of agency land in Del Norte County, but agencies lack resources and money. They are under funded to manage what they have (example the Forest Service).

A Northern California Coastal Conservation Needs Assessment

Humboldt County Meeting Summary

The following is a summary of meeting notes and questionnaire responses collected at the Humboldt County Linking Land and Sea meeting held at the Humboldt County Agricultural Center on February 18, 2006. The meeting was attended by 29 people. Twenty-three people completed a *Regional Coastal Conservation Planning and/or Implementation Questionnaire*. The results were summarized by Ruth Blyther, project consultant, and include input from the group discussion and questionnaires.

1. Do we need more regional coastal conservation planning?

Written responses (23 total):

Yes – 10 total. Seven people noted that the need was for marine and nine for connecting marine and terrestrial plans. Three people noted the need for more terrestrial planning.

No – 3 total. All noting we don't need more regional terrestrial planning

Maybe – 5 total. If they address site specific issues; if we categorize the plans we have and then fill the gaps.

Not Sure – 5 total. These people felt they did not know enough about existing plans to answer the question.

Comments (from group discussion and questionnaire):

We need a better understanding of what plans currently exist, and how they link together and compliment each other. There is a lot of variability in existing plans, very few are peer reviewed. Is the information in the reports relevant and recent? "I am one of those people who would like to understand the current conditions of and future plans for both land and sea in the 3 county region, but do not have the time or experience to review the plans and come to personal opinions."

The region needs a mechanism to knit together existing efforts both those that have been completed and those that are planned. This mechanism should include a spatial representation of existing plans, a database with links, and should be centrally-housed and be updated in perpetuity. There is a lot of this type of information for watersheds throughout the north coast region contained on KRIS Web (www.krisweb.com). KRIS Web contains annotated bibliography of plans, documents, studies and geospatial data. This information is provided in separate watershed data bases, such as KRIS Noyo, KRIS Navarro, etc.

It would be useful to categorize the existing plans (marine and terrestrial) and to clearly identify the gaps that exist. Having a few people who are knowledgeable about what exists who can then educate others would be very helpful. Conservation plans should be crossed referenced with other plans such as economic, transport, and land use plans. "We need to understand what the conservation goals are (or

Comments from Question 1 (continued):
could be) then have the current plans reviewed to see if the information to support the goals has been identified."

It would be useful to integrate existing plans as many of them have a narrow focus (ie birds, open space, development, land use). Existing data gaps should be identified and a prioritization for filling them should be completed. Integration of plans could occur after data gaps are filled.

A. If we need more regional coastal conservation planning, then what type of planning is needed?

a) Marine Planning – During the group discussion 16 of the 29 people indicated that there is a need for more marine planning (55%). In the written questionnaire responses 12 people out of the 23 responding indicated the need for more marine planning (52%). Several people who filled out the questionnaire did not respond to this question.

Comments:
We need basic marine habitat mapping (GIS layers of marine resources) to be conducted in this region (sea floor mapping). The region needs a mechanism to identify and monitor who is doing what; plan objectives and scales. There should be a mechanism for information sharing and data management for marine planning. This would increase efficiency and reduce duplication. Need regional and local data on fish recruitment and to document the importance of estuaries/bays to marine fish recruitment. There is very little information available regarding marine resources for the north coast.

b) Terrestrial Planning - During the **group discussion** 2 of the 29 people indicated that there is a need for more terrestrial planning (7%). In the **written questionnaire** responses only 3 people out of the 23 responding indicated the need for more terrestrial planning (13%). Seventeen people did not indicate terrestrial planning as a need (7 people who responded Yes; 4 Maybe; and 6 Not Sure to question #1). Three people responded in the negative – No more terrestrial planning.

Comments:
The Humboldt County Planning Department has piles of existing (terrestrial) plans, and no one person can know what is in all of these plans. There are so many terrestrial conservation plans and we do not know what they all say, so it is difficult to know if we need more and what we need (note the Conservation Prospects for the North Coast has a good synopsis). Seems like it would be good to take a break in terrestrial planning so people can catch up with what exists.

Question #1A: What type of planning is needed (continued):

c) Address Connection between Terrestrial and Marine
All twenty-three of the respondents noted this as a need.

Comments:
We need regional and local information on how terrestrial influences are affecting the marine environment. For estuaries we need to know, "What's being done to protect and enhance estuaries in our region?" What are the current conditions of and threats to regional estuary habitats? (This has been addressed somewhat in the TNC and SRL regional planning efforts).

We need more education regarding the linkages between marine and terrestrial ecosystems. Anadromous fish are an obvious link, but there are also others such as the Marbled Murrelet and many other species that move between the two; impacts of river water quality on marine resources; long term effects of global warming on ocean levels, etc.. What are the sediment impacts from the major rivers on the near shore habitat? (there have been a couple of reports done – Jeff Borgeld's strataform project, HSU Thesis on Eel River Sediment impacts on kelp beds.)

There are data sets already available for development of some of marine/terrestrial relationships. But there are plenty of data gaps regarding marine/terrestrial ecotone that should be categorized and prioritized (mapping of marine habitats, identification of marine species nursery habitats, water quality impacts to marine environment, depiction of seasonal changes and natural variation, bathymetry etc.).

d) Specify Regional Priorities
Five people noted this as a need on the questionnaire.

Comments:
Regional priorities should be specified and based on ecosystem-based management. Such a plan should identify ecosystem-based management projects for watershed/estuary/near-shore ecosystems. There is a need to conduct more estuary planning. There is a specific need for an estuary restoration plan for Humboldt Bay/Eel River. There is a need for a marine plan that identifies regional priorities.

e) Implementation Strategies for existing plans
In group discussion 16 of the 29 participants indicated this as a need (55%). In the written responses 9 of 23 noted this as a need (39%).

Comments:
Funding for this is needed (NOAA). This isn't really part of a planning strategy, but is actual implementation of identified strategies. This is where we need to focus our efforts.

Question #1A: What type of planning is needed (continued):

f) Other – We need plans that ….
Nine people identified this as a need and provided input.

Comments:
We need plans that: Forecast trends, what will happen if we continue on the same path? Modeling is important to help us understand the impacts of our management decisions. Trend forecasts can be a real motivator for policy implementation. For example the impact of the North West winds on our ecosystem and what effect global warming has on these. The impact of a krill crash, "What do we do when the crash occurs?" Are we ready to react before or if that happens?

The region needs a way to organize, summarize and catalogue existing plans (this has been done for terrestrial in the Conservation Funds, Conservation Prospects for the North Coast, but not for marine plans). There is a need for more geographically focused plans that address estuarine restoration in Humboldt Bay; and cover the Eel and Smith Rivers, and the coastal tributaries that have been overlooked in planning (Bear River). There is also a need for plans/strategies that address site specific issues along the coast such as improved access/trails, discharge to ASBS/Critical Coastal Areas. We need basic marine habitat mapping.

In addition to ecosystem-based planning, we need assistance with sociological planning and getting the political support required for conservation in this region (ie hire Karl Rove if he can get Bush elected he can help us a lot!).

B. Who would be the target audience for such a plan? Who would use it?

Fourteen people responded to this question. Their answers were diverse and basically all stakeholder groups were covered. The audience recommendations range from all conservation entities to the urban populations and included:

Government Agencies (9) - Regulatory and funding agencies (main objective should be funders, to help with project prioritization); resource management agencies especially marine habitat and fisheries managers; and local coastal planners and decision making bodies.

Implementation organizations (5) - that use plans for a framework for adaptive management. Entities that could implement the strategies identified, and regulators with the potential to obstruct or assist with implementation.

Private property owners (3)

General Public (6) - Unintended users, much of this information in existing plans is focused on single user groups, but it could be tremendously valuable to many other interested parties and the general public. The public needs education especially the urban population to increase buy-in for coastal conservation. More education is needed on the linkage between marine and terrestrial ecosystems.

Not Sure (2)

2. Is there a need to integrate terrestrial and marine plans?

Sixteen (70%) out of 23 people provided written response to this question, and all of them agreed that this is a need, although there was uncertainty about how it could be accomplished.

Comments:
The need is for implementing actions that have clear benefits to terrestrial and marine resources. For the north coast region there is a need to first finish the marine planning and then integrate the two if that need is identified. Aside from estuaries and fish, the regional terrestrial plans have not identified linking terrestrial with marine ecosystems/resources as a need.

Integrating terrestrial and marine plans will be difficult because typically the regulatory agencies don't overlap, needs may be different and difficult to integrate. The main need is to educate folks on existing plans so they can see the linkages. From a marine perspective we need more information on the effects of terrestrial on marine resources (ie sediment, pollutants, freshwater influence).

Estuaries are not included in the marine planning and in general terrestrial plans also avoid the estuaries. There is a need for estuary planning in the region, and this is the area where there is a clear linkage between the two ecosystems.

A. How could this be done?

Make the existing plans available and accessible, and create a regional annotated bibliography with synopsis for the marine plans. Develop a spatial data base that shows the plans and how they connect and overlap. Build a GIS that has each plan as a layer that groups complementary/overlapping plans. Develop a matrix of plans to identify coverage and gaps along with a map that ids the areas that existing plans cover.

Focus on areas of interest (stormwater entry points and sources, ASBS, etc). Create watershed, estuary, near shore and open coast connections. Provide a way for people to understand the connectivity (Hug a manatee strategy, Protect the Bay, Everyone Lives Downstream etc). Connect the continuing loss of Eel River top soil with the marine effect of the silt tonnage from this river. Look for correlations of patterns in freshwater and saltwater data.

3. What do you think are the most important gaps in existing coastal conservation plans?

Thirteen people responded to this question (56%).

Comments:
Important gaps include: Long range forecasts, specific implementation and funding strategies, estuary plans, integration of existing plans, resource management on private lands, and various data gaps.

Question 3: What do you think are the most important gaps? Comments (continued):

We need reliable **long range forecasts** and information on trends in ecosystem change/impacts – so people know where we are headed. Forecasts can be used to add a sense of urgency and increase public awareness and support for conservation.

Most of the existing plans for the region lack specific **implementation and funding strategies**. A significant gap is being able to identify actions that will affect the most critical limiting factors or "drivers" of habitat degradation and then having the resources to do something about them. There is a lack of direction on implementation in many of the existing plan recommendations. Planning and recommendations for estuary conservation are lacking.

We need to have better **integration** of existing plans. Need to address resource management on private lands. Need seamless coverage of the coast with comparable data sets, so we can see patterns. The Critical Coastal Areas program seems to be using a one strategy fits all approach, this should not be the case.

There are significant **gaps in data and information**, coastal monitoring, and plans that address estuary restoration. There is a lack of fish data that show where fish nurseries are: Off shore? Near shore? Deep reefs? You can manage fish and conservation only if you have these focused data to support the management decisions. It would be very helpful to have Lidar coverage implemented on regular basis.

4. Do we need more specific (local geographic focus or resource focus) plans within the region?

A total of 13 people responded to this question. (Yes, 8; No, 3; Maybe, 2,).

Comments:
Yes – if they include priorities for implementation, action plans and the permitting to carry them out. No - these should emerge through various parties making opportunistic use of existing plans. Maybe - we need better idea of what exists already

A. If so what specific focus would you like to see?

- **Geographic focus** - Ten Mile, Albion, Humboldt Bay and Eel River estuaries Humboldt Bay and Eel River. Eel River water supply, sediment supply and fisheries. There is insufficient planning for the Eel River. Look at the plans for the Garcia River and Mattole River as examples of good conservation plans. Not sure about the Smith River it may be considered to clean to draw resources?
- **Resource Focus** - Restoration of diked tidelands. Coastal plans, which are a nexus of natural resource, agriculture, recreation, and residential/commercial values. Terrestrial land management and how it relates to marine protected areas (CCA, ASBS)

Question #4 A: What kind of specific plan focus would you like to see? Comments (continued):

- **Adaptive management** plans with political will to implement plans. (More planning seen as a way to stall on hard decisions that politicians don't want to make.)
- **Socio-Political.** Need to reinvigorate the urban environmental "calendar" to get votes to support conservation efforts. People in urban areas need to care about this area – education.
- Management plans for **private lands**. Generally single ownership, small scale plans to address soil, water, air, plants, animals and humans, generally in agricultural context (NRCS).

5. We don't need more planning we need to focus on implementing the plans we already have.

A total of 16 people responded (70%). Strongly Agree, 8 (for terrestrial); Somewhat Agree, 4; Neutral, 2; Somewhat Disagree, 3; Strongly Disagree, 1 (for estuaries and marine)

Comments:

A lot of planning does not get implemented. Implementation will happen regardless of whether you plan or not – so if you do more planning "How do you make sure the plan reflects the reality of ongoing implementation?" We need better coordination of projects that are being implemented by numerous land managers and entities. "How can we connect projects and land management across ownerships and across public/private and agency to agency?" Rather than piecemeal conservation we need better ways to collaborate and do conservation on a larger scale by linking efforts. From a land managers point of view we want to coordinate with adjacent properties. Agencies need to coordinate and communicate with each other and with private efforts.

The need is to implement actions that have clear benefits to terrestrial and marine resources. Plans are much like statistics they are used by people to prove they are right but unless they are implemented no water quality improves, fish pop increase etc. We need both - implement existing plans and fill gaps where needed. Adaptive management is the key. Implement what is "on the shelf" but build upon what will be done or needs to be done.

Notes on questionnaires not related to a specific question.

It is important to note the objectives of each plan – for instance the marine plans – several are for management, some are used to develop requests for proposals etc. In a future presentation stating the objectives of each plan would assist the participants.

BLM has done a lot of planning they are data rich but information poor. We need to work with other organizations to go after dollars that are not federal as federal funds for BLM are drying up. Need Cooperative Agreements between government entities and non-profits to cooperate on applications for funding. Need to develop better partnerships.

As Redwood Forest Foundation, Inc. the Conservation Fund's Conservation Prospects for the North Coast is sufficient to help us identify properties that a broader group of stakeholders are interested in (with whom we could create partnerships for acquisition).

A Northern California Coastal Conservation Needs Assessment

Mendocino County Meeting Summary

The following is a summary of meeting notes and questionnaire responses collected at the Mendocino County Linking Land and Sea meeting held at the Fort Bragg Town Hall on March 22, 2006. The meeting was attended by 10 people. Six people completed a *Regional Coastal Conservation Planning and/or Implementation Questionnaire*. The results were summarized by Ruth Blyther, project consultant, and include input from the group discussion and questionnaires.

1. Do we need more regional coastal conservation planning?

Written responses (6 total):
Yes – 4 total. Three people noted that the need was for marine. Two people noted the need for more terrestrial planning.
No – 0 total.
Maybe – 2 total.

Comments (from group discussion and questionnaire):

A. If we need more regional coastal conservation planning, then what type of planning is needed?

a) Marine Planning –

Comments:
Need plans that address invasive marine organisms. Do they exist? Answer from Susan Schlosser, Sea Grant, "There are two nation wide invasive species task forces, but there are no plans yet."

b) Terrestrial Planning -

Comments:
Where needed to prioritize specific resources already known to be significant. Need more planning that leads to implementation.

c) Address Connection between Terrestrial and Marine
Six of the respondents noted this as a need.

Comments:

Address terrestrial impacts on marine resources; and inter-tidal and estuarine ecosystems. Need to understand the interaction between sediment coming from the land and its affect on marine life.

Need to make sure that the data in plans is updated and data resources are updated on a regular basis.

Need on-site inventory of resources and public access to information. The Mineral Management Survey contains a lot of Mendocino coastal data, but is not readily available, Susan Schlosser (SeaGrant) has hard copy.

d) Specify Regional Priorities

Four people noted this as a need on the questionnaire.

Comments:

Not regional but site specific priorities. Not so much of a need.

e) Implementation Strategies for existing plans

Five people noted this as a need on the questionnaire.

Comments:

Yes! We know we need to be working in a watershed, but need to prioritize where you'd get the most effective projects. Need more site-specific plans.

f) Other – We need plans that ….

Four people identified this as a need and provided input.

Comments:

We need plans that:

- Create basic knowledge on terrestrial/marine linkages
- Prioritize across the north coast. SRL's perspective: Where within the range of coast redwood should we focus our efforts?
- Can be implemented and that provide for a human and natural resources future.
- Invasive exotics management/eradication plans
- Contain more detail to be useful for our area (Gualala). Larger plans did not cover this area sufficiently a small property was not identified as having conservation value, so now it is difficult to find funding for its protection. Gualala falls between two larger plans – falls through the cracks.

B. Who would be the target audience for such a plan? Who would use it?

Four people responded to this question.

Government Agencies (3) – Public agencies, funders, resource agencies

Implementation organizations (3) – Non-profit organizations; those facilitating future needs attainment; environmental protection groups

Private property owners (3)

General Public () – Residents of the north coast

Other (3) – Resource management professionals

2. Is there a need to integrate terrestrial and marine plans?

Four people provided written response to this question, and all of them agreed that this is a need, although there was uncertainty about how it could be accomplished.

Comments:

Yes, but this needs to be done specifically through estuary, coastal drift studies, good information on watershed outputs source analysis etc., not broad strategic plans.

A. How could this be done?

Look at threats to anadromous fish. Make sure that the three mile out area is included in planning. Research on estuaries; study estuaries, intertidal, stream influence on bays and coastal erosion.

3. What do you think are the most important gaps in existing coastal conservation plans?

Five people responded to this question.

Comments:

Important gaps include:

- Usal Creek including the lagoon
- Eel River conservation areas including estuary and delta; South Fork Eel to the coast. Note ospreys and the ocean.
- Staff to implement and trained people to volunteer.
- I need more recent data on coho abundance and more site specific data for steelhead.
- The gap between strategic vision and implementable analysis, parcel analysis, resource assessments
- Estuarine habitats, community shoreline park potentials, seawalls, armoring, riprap, sea level rise influence on shoreline, recreation balance with preservation.

4. Do we need more specific (local geographic focus or resource focus) plans within the region?

All six people responded yes to this question.

A. If so what specific focus would you like to see?

Geographic focus

- Estuaries and places with watershed wide significance to protection of aquatic and marine biodiversity.
- Ten Mile River watershed with an emphasis on the estuary.
- Our land trust, which is essentially between the main areas studied by Sonoma Land Trust and Mendocino Land Trust, needs more study of our immediate area and watersheds (Gualala).
- Gualala geologic study water runoff land sediment slides
- Mattole long-term infrastructure planning
- Cottoneva creek public access

Resource Focus

- Trails, stewardship forestry, conservation of marine and inter-tidal resources, fishery and watershed restoration.
- Address exotic invasive plants.
- Priorities for conservation across the range of coast redwood.
- Watershed level planning; potential sites for conservation, public access to seashore, pygmy forest.
- Estuaries
- Id areas that should be conserved as shoreline, parks (bluffs beaches, estuaries)

Data/Information Focus

- Follow up on oil spill prevention and response DFG/OSPR. This plan doesn't focus on natural resource damage and effects but has a large amount of information about coastal resources that could be damaged, need to add to this effort and gather more and more detailed/better baseline data
- Seashore armoring and influences on marine life and public access
- Sea level change rise due to climate change and the potential impacts to coastal resources

5. We don't need more planning we need to focus on implementing the plans we already have.

A total of 5 people responded. Strongly Agree, 1; Somewhat Agree, 3; Neutral, 1; Somewhat Disagree, 1; Strongly Disagree, 0

Comments:

- We need more planning and we need help in implementing existing plans. My organization (SRL) primarily needs help with implementation (we have sufficient funds for planning).
- Need both more planning and more implementation.
- Implementation prioritizations of specific projects.
- Added need of agency staff to write grants and work with partners. Example, we all talk about streamlining the permitting process, well if there were more DFG, CC staff permit processing would get done faster.
- Project design - the smaller organization/grantee needs better collaboration with other organizations and agencies.
- The agencies should assist with helping to coordinate funding, finding other matches and bringing others to the table. Example: In one acquisition project instead of the agencies working together the initial funding agency required the local organization to find matching funds. This added another step for the local organization, made up of volunteers, to go and find the match funding for acquisition. Since the matches often come from other government agencies they should assist in coordinating the search.
- Need more funds for acquisition and for operations and maintenance.

Stakeholder Contact List

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Appendix F

Regional Coastal Conservation Planning and/or Implementation Questionnaire

Name: _____

The geographic scope of the Linking Land and Sea project is coastal Mendocino, Humboldt, and Del Norte Counties including coastal watersheds to the extent feasible. The westward boundary of the Needs Assessment is the three mile state marine management limit.

Instructions: Given this geographic scope and your knowledge of existing regional coastal conservation planning, please answer the following questions. Please give as detailed a response as possible, utilize the back of this page if you need more space.

1. Do we need more regional coastal conservation planning? Yes No Maybe Not Sure

A. If so, what type of planning is needed?

a) Marine b) Terrestrial

c) Address Connection between Terrestrial and Marine

d) Specify Regional Priorities

e) Implementation Strategies for existing plans

f) Other – We need plans that ….

B. Who would be the target audience for such a plan? Who would use it?

2. Is there a need to integrate terrestrial and marine plans? How could this be done?

3. What do you think are the most important gaps in existing coastal conservation plans?

4. Do we need more specific (local geographic focus or resource focus) plans within the region?

If so what specific focus would you like to see?

5. We don't need more planning we need to focus on implementing the plans we already have.

Strongly Agree Somewhat Agree Neutral Somewhat Disagree Strongly Disagree

Name: _____

I.	Organizational Needs (Building and Maintaining Your Organization)		Organizational Need	Regional Need
1.	**Business Planning**			
	a.	Assistance in the creation of a business plan.		
	b.	Assistance in the creation of a strategic plan.		
	c.	Assistance with developing or sustaining a marketing program.		
	d.	Solutions/strategies to cover up-front costs of developing projects.		
2.	**Business Management and Finances**			
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).		
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).		
	c.	Assistance with strategies to retain knowledgeable staff.		
	d.	Enable advance and/or speed up payment process for government funded projects.		
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.		
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.		
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.		
3.	**Additional Needs in this Category (Please list).**			
	a.			
	b.			
	c.			
	d.			
		Sub-total for this sheet		

My favorite state/federal funding program is_____

Reason: _____

_____

I generally access information through:

- ☐ Internet
- ☐ Written Reports
- ☐ People/Experts
- ☐ Workshops
- ☐ Library
- ☐ KRIS
- ☐ Newspapers
- ☐ News Media
- ☐ I am overwhelmed with too much information and don't have time to review what already exists.

I did not select this category of need because (Please check appropriate box below if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my/my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

II.		Data Needs (Development of and/or Access to the Best Available Science and Information)	Organizational Need	Regional Need
1.		**Environmental Monitoring and Research**		
	a.	Support for monitoring environmental parameters. Which parameters? _____		
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**		
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**		
	d.	Increased research on _____.		
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.		
2.		**Socio-Economic Monitoring and Research**		
	a.	Research on the economics of coastal conservation and restoration		
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)		
3.		**Environmental, Economic and GIS Data**		
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.		
	b.	Additional spatial data on (please list needs) _____.		
	c.	Guidance on data and attribute standards.		
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.		
	e.	Information on model conservation projects that integrate marine and coastal conservation.		
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work		
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.		
	h.	Assistance with developing GIS data layers for specific projects.		
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.		
4.		**Additional Needs (Please list).**		
	a.			
	b.			
	c.			
	d.			
		Sub-total for this sheet		

I did not select this category of need because (Please only check box if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my/my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

III.		Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)	Organizational Need	Regional Need
1.		**Collaboration/Communications**		
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.		
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.		
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.		
	d.	A "one-stop shop" to identify government programs and assistance.		
	e.	Improved marketing of existing incentive programs.		
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).		
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.		
2.		**Policy Needs/Incentives**		
	a.	Improved incentives for landowners to conduct conservation activities on their land.		
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).		
	c.	Development of incentives for marine resources user groups to include conservation measures.		
	d.	Effective marine policies that include conservation.		
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.		
	f.	Programmatic permits for specific types of conservation projects or geographic regions.		
3.		**Additional Needs (Please list).**		
	a.			
	b.			
	c.			
	d.			
		Sub-total for this sheet		

I did not select this category of need because (Please only check box if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my/my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

IV.		Outreach and Education Needs (Developing Community Stewardship)	Organizational Need	Regional Need
1.		**General Public Outreach and Education**		
	a.	Improved public access to significant areas/projects (map production, access, etc).		
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)		
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.		
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.		
	e.	Support/assist with K-12 education programs.		
	f.	Improved community buy-in for coastal conservation.		
2.		**Connecting People to Place**		
	a.	Assistance with outreach products to connect community to place (land and ocean).		
	b.	Increased stewardship ethic in our community.		
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.		
3.		**Additional Needs (Please list).**		
	a.			
	b.			
	c.			
	d.			
		Sub-total for this sheet		

I did not select this category of need because (Please only check box if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my/my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

V. Training and Technology Needs			Organizational Need	Regional Need
1.		**Conferences/Workshops/Peer Learning**		
	a.	Funds for attending professional conferences.		
	b.	Access to focused education opportunities (continuing education, Extension courses, workshops).		
	c.	Opportunities for peer learning with other organizations who do similar work.		
	d.	Increased venues for sharing data and information (workshops, forums and conferences).		
2.		**Equipment**		
	a.	Field equipment (i.e. tools)		
	b.	Vehicles (i.e. trucks and boats)		
3.		**Technology**		
	a.	GIS Software.		
	b.	Other software needs? (please provide list). _____.		
	c.	New computer hardware.		
4.		**Additional Needs (Please list).**		
	a.			
	b.			
	c.			
	d.			

5. Training and Access to Technical Expertise			I/My organization needs_____ In-house Technical Training.	Access to Professionals with Technical Expertise.
	a.	Engineering.		
	b.	Hydrology.		
	c.	Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).		
	d.	Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**		
	f.	Environmental Law.		
	h.	Process skills - **facilitation, negotiation, project evaluation (please circle bold).**		
	i.	Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.		
	j.	**Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**		
	k.	GPS.		
	l.	Web design, graphic design.		
	m.	Permitting projects.		
	n.	Other: _____		
		Sub-total for this sheet		

I did not select this category of need because (Please only check box if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my/my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

VI.	Regulatory Needs (Understanding and Improving the Regulatory Environment)	Organizational Need	Regional Need
a.	Improved understanding of marine laws and regulations that affect marine conservation.		
b.	Enforcement of existing regulations (i.e. Clean Water Act)		
b.	Safe Harbor programs for private lands that is adopted by federal and state agencies.		
c.	Assistance with determining what permits are necessary for project implementation.		
d.	Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).		
e.	Permit Assistance Center to aid landowners doing voluntary conservation projects.		
f.	Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).		
3.	**Additional Needs (Please list).**		
	a.		
	b.		
	c.		
	d.		
	Sub-total for this sheet		

I did not select this category of need because (Please only check box if you did not have any needs on this form)

- ☐ I/my organization is reasonably funded in this capacity.
- ☐ It is not within my or my organization's interest or expertise.
- ☐ This is important to my organization, but it is not a high priority compared to other needs.
- ☐ I do not think this category of need is a high priority for our region.

Name: _____

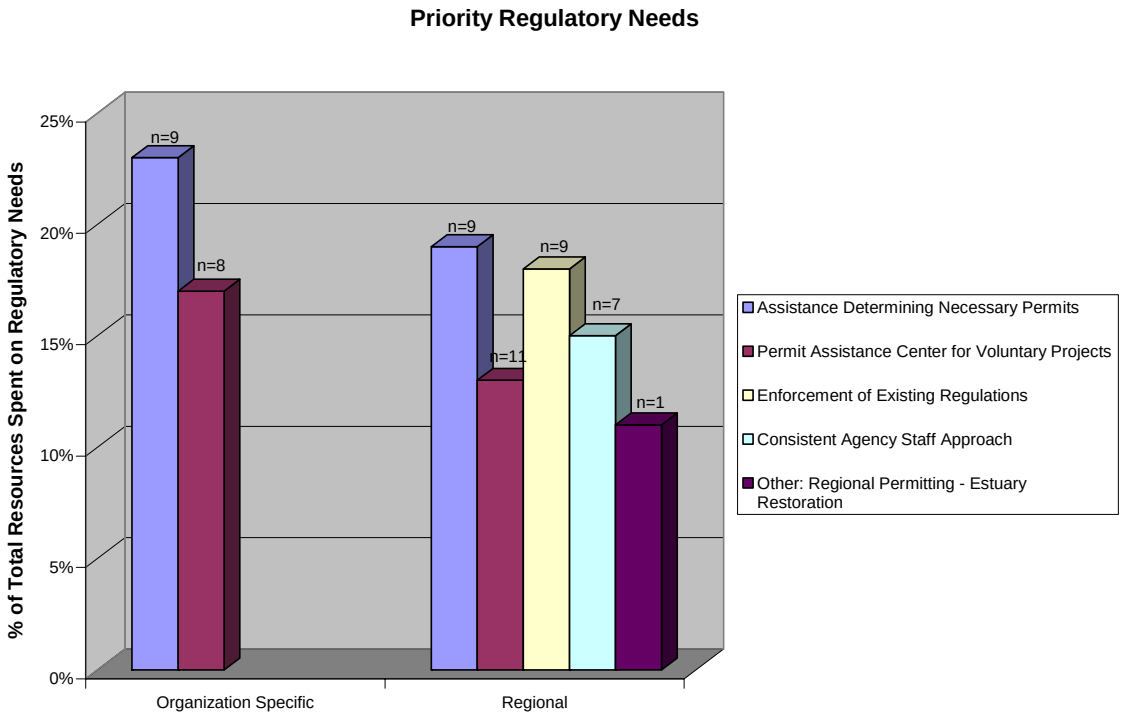
As the conservation organizations that RCAA is assessing are multi-faceted, it is difficult to capture all of the potential needs in a survey. If there is a need category that is not represented on the other sheets, please detail your needs below.

VII.		_____	**Organizational Need**	**Regional Need**
1.		_____		
	a.			
	b.			
	c.			
	d.			
2.		_____		
	a.			
	b.			
	c.			
3.		_____		
	a.			
	b.			
	c.			
	d.			
		Sub-total for this sheet		

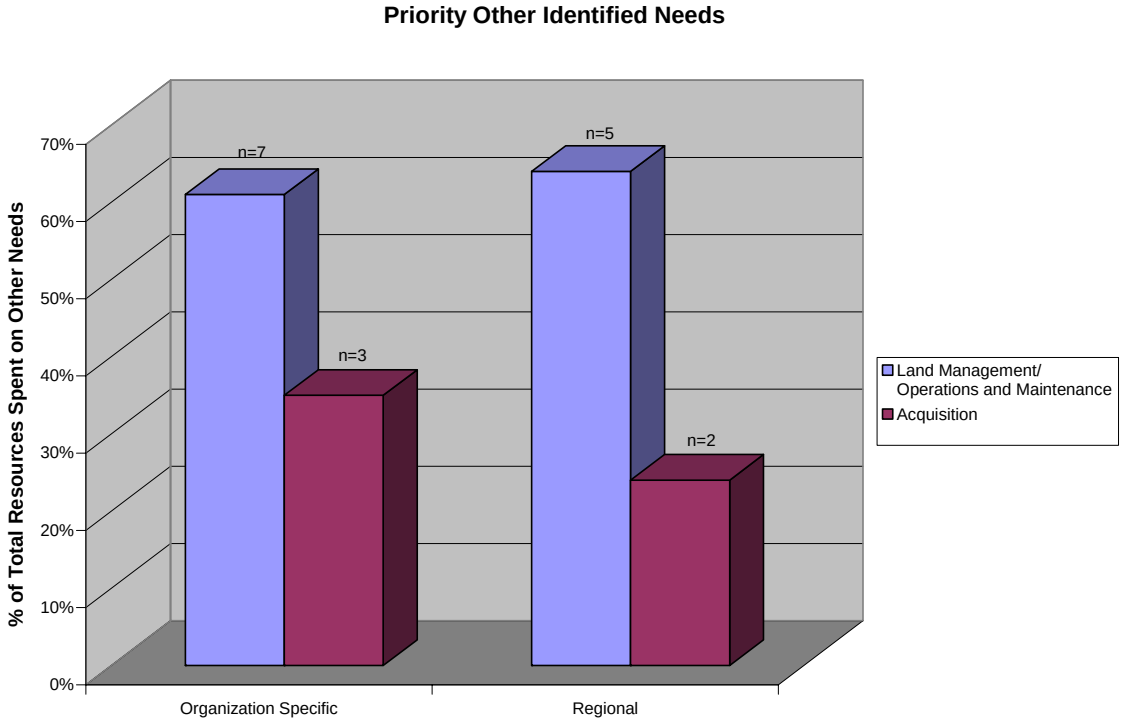
Additional comments:

Appendix H
Additional Survey Results

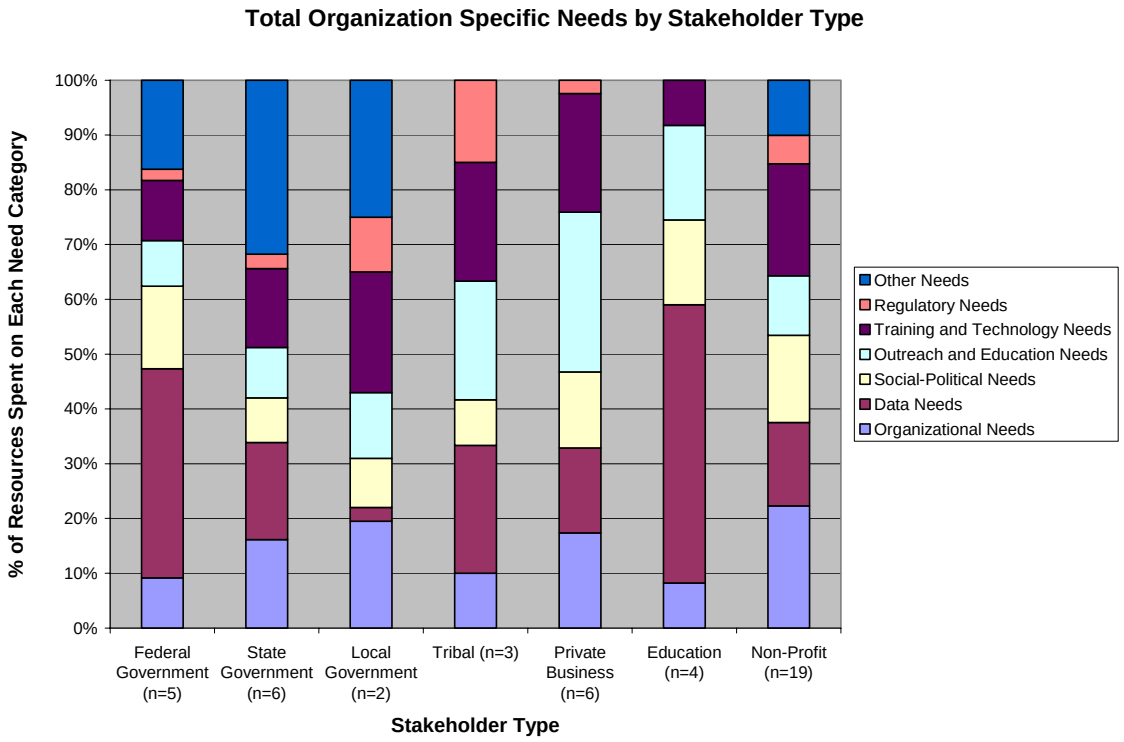
Priority Regulatory Needs Chart



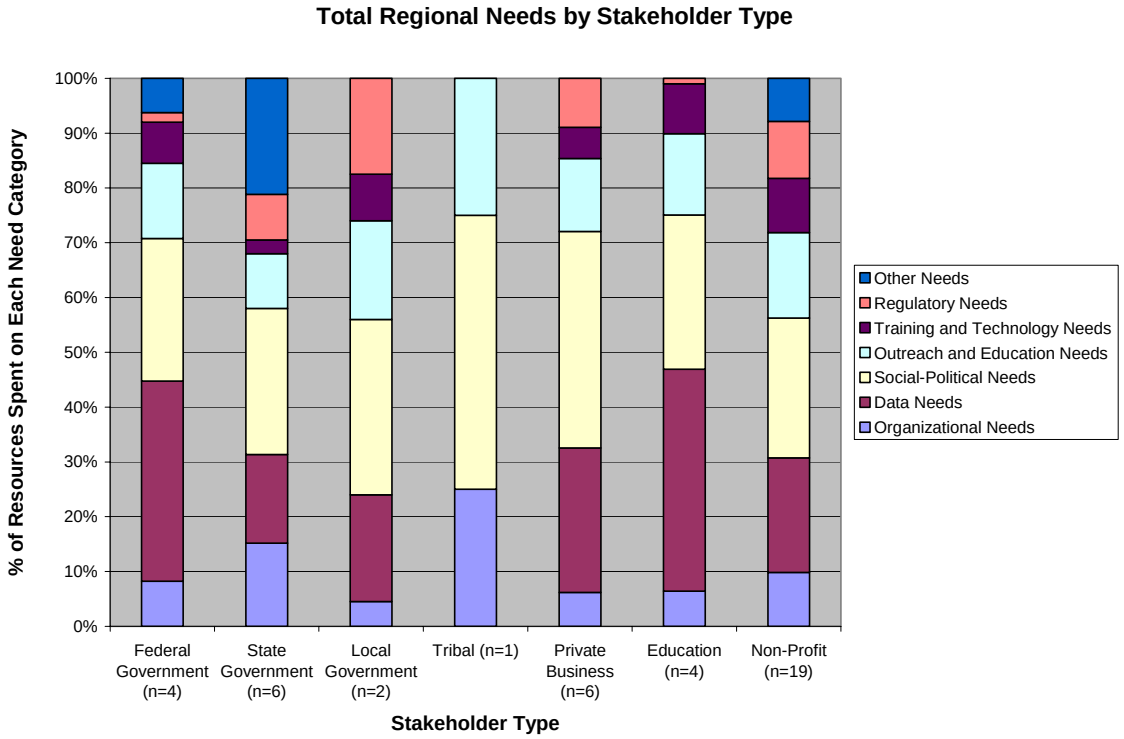
Priority Other Identified Needs Chart



Total Organization Specific Needs by Stakeholder Type



Total Regional needs by Stakeholder Type



Appendix I
Qualitative Survey Responses

I. Organizational Needs

2.a Strategies to cover or reduce indirect operating expenses (our indirect expense is approx. _____%)

- 10%
- 15%

II. Data Needs

1.a Support for monitoring environmental parameters. Which parameters?

- Biological (birds/mammals/plants) for easements and hydrological for land
- Kelp bed health
- Ocean water quality
- Water quality
- Water quality
- Marine, PISCO (rocky intertidal/sand habitat)
- Trend – physical (LiDAR), biological (rocky intertidal using Marine protocol), water quality (sediment, temp. at river mouth)
- Temp., salinity, turbidity, oxygen, chlorophyll
- conservation, slowing "multiple use"
- water quality (pH & pollution from septic tank leach fields)
- water quality & coastal streams assessment for Lake Earl watershed
- stream sedimentation from roads
- water quality, biological productivity
- water quality, fish, inverts, riparian area
- forest regrowth – regeneration & aquatic health
- stream channel cross-sections; aquatics
- sedimentation, sensitive species, exotics
- rainfall, stream flow, erosion/sedimentation, fish

1.b Assistance with designing **monitoring** or **research** protocols and programs (**please circle bold**)

- monitoring
- research
- monitoring (regional need)
- research
- research
- monitoring
- monitoring (marine)
- monitoring
- monitoring
- monitoring
- monitoring & research
- research
- monitoring & research

- monitoring

1.c Necessary supplies or equipment for **existing/new** monitoring or research (**please circle bold**).

- existing
- new
- new
- new
- existing & new
- new
- new
- new

1.d Increased research on…

- marine birds/mammals on offshore rocks
- sedimentation rate of bay over time
- ocean fauna
- connectivity & variability in estuarine habitat (terrestrial & marine)
- ID marine environmental parameters to monitor: water quality, sediment currents, sea level rise (when & how much)
- watershed restoration/fish habitat
- salmonid population estimates
- coastal cutthroat genetics (Lake Earl Lagood Trips)
- marine …….. (needs) can not read Chris Howard's handwriting
- wildlife, ecological relationships
- coastal rubbish & starvation of shore birds
- fish pops/restoration effectiveness
- estuarine processes
- exotic invasive species removal
- cumulative effects
- resource/population balance & sustainability

1.e Coordination of monitoring and research within a specific geographic area – Where?

- offshore rocks from OR to Pt. Arena
- Coastal to offshore
- Humboldt Bay
- Trinidad Plateau/North Coast
- HSU? NOAA HBHRD
- Redwood ASBS (for organizational need) & N.C. Region (for regional need)
- Humboldt County
- Del Norte/Humboldt Counties
- Smith R.
- Del Norte
- Del Norte Co. offshore rocks/islands
- Smith R. HU
- Big R. watershed
- between Westport & Pt. Arena
- Mendocino Coast
- Mattole River, …..? can not read Richard Gienger's writing

3.b Additional Spatial Data on (please list needs)

- all coastal habitats of Del Norte, Humboldt, Mendocino
- inventory for small scale conservation planning
- economics of clean water, healthy watersheds
- marine habitat
- marine habitat mapping
- various marine habitats
- bathymetry
- fisheries resources & land ownership
- steelhead abundance (site specific)
- marine estuarine resources
- 10m. DEMs for site-specific elevations/ fine-scale bathymetry

3.i An entity that can develop up-to-date, accurate data layers for a diversity of groups

- Green Info. for North Coast

Other notes: The Nor.Cal coast is a international treasure see Dave & Christine Throgmorton mapping of coastal and adjacent areas

III. Social-Political Needs

1.a Improved **communication** with conservation partners. My org. needs this with:

- organization/agencies with grant opportunities
- landowners/neighbors
- state/fed agencies, tribes, nonprofits, etc.
- other land trusts in the area
- others in service area
- Mendo Land Trust, state parks, CNPS, Audubon
- agencies and nonprofits
- various
- possible funding sources
- do pretty well here

1.b Improved collaboration with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc.) My org. needs this with:

- non-profit organizations wanting to do projects on BLM land
- Humboldt Bay, Eureka, Arcata, Harbor District
- state/fed agencies, tribes, nonprofits, etc.
- state/fed agencies, tribes, nonprofits, etc.\
- 1) conservation entities (local/regional) working together (priorities); 2) matching funds
- CDFG
- agencies and land trusts
- others in service area
- CalTrans
- various
- Yurok/Tolowa, Tribes/Green Diamond
- timber companies & county/city planning

- entities working outside Del Norte County
- assistance w/ transport of birds to other agencies
- do pretty well here

1.d A “one-stop shop” to ID government programs and assistance
- and non-profit grant organizations

1.f Development of regional funding mechanism (e.g. Open Space Dist., North Coast Conservancy)
- County Open Space District

2.a Improved incentives for landowners to conduct conservation activities on their land.
- e.g. conservation easements

2.b Improved incentives for resource users
- for fishermen – monofilament & deliberate killing
- to practice conservation?

2.e Improved tracking and implementation of marine/coastal policy (**local/state/federal**)
- state/federal
- local/state
- state
- state
- state/federal

2.f Programmatic permits for specific types of conservation projects or geographic regions
- coordinated permitting

IV. Outreach and Education Needs

1.a Improved public access to sig. areas/projects (map prod., access, etc)
- we need mapping of coastal areas

1.e Support/assist with K-12 ed. programs
- make that K-16

2.a Assistance with outreach products to connect community to place (land and ocean).
- technical assistance

2.c Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean
- tribal knowledge is key

V. Training and Technology Needs

2.a Field Equipment
- shovels, hand tools, chainsaw
- High-end GPS
- water quality monitoring

2.b Vehicles (i.e. trucks and boats)

- trucks
- ATV

3.a GIS software

- extensions
- available from ESRI to nonprofits

3.b Other Software needs?

- Desk top publishing
- publication software/expertise
- database management
- Arc Map
- parcel quest

3.c New computer hardware

- upgrades
- mapping ?

5.d Habitat restoration **design, implementation**, and/or **monitoring**:

- monitoring
- monitoring
- design, monitoring
- design, implementation
- design, implementation, monitoring
- design
- design, monitoring
- monitoring
- monitoring

5.h Process Skills – **facilitation, negotiation, project evaluation** (circle bold)

- facilitation
- project evaluation
- facilitation, negotiation, project evaluation
- project eval

5.i Coastal and marine conservation applications in **GIS/remote sensing**

- remote sensing
- GIS
- GIS
- GIS
- remote sensing
- GIS , remote sensing
- remote sensing
- GIS
- GIS, remote sensing

5.j **Contracting, MOUs, Cooperative Agreements, Prevailing Wage** (circle bold)

- remote sensing
- MOUs
- contracting
- contracting, MOUs, cooperative agreements
- all of the above
- prevailing wages

5.n Other:

- Board education/Conservation easements
- professional staff positions
- rehabilitation skills

text = identified as priority needs

I. Organizational Needs (Building and Maintaining Your Organization)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Educati on	Nonprofit Organizations						Totals
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1.	**Business Planning**																	
	a.	Assistance in the creation of a business plan.																0
	b.	Assistance in the creation of a strategic plan.													5			5
	c.	Assistance with developing or sustaining a marketing program.									10							10
	d.	Solutions/strategies to cover up-front costs of developing projects.			30					2		5		2			15	54
2.	**Business Management and Finances**																	
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).								2		5		1			5	13
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).								2				1	5			8
	c.	Assistance with strategies to retain knowledgeable staff.									5							5
	d.	Enable advance and/or speed up payment process for government funded projects.																0
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.					3					5	2	3				13
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.					5			1			3	2				11
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.				10								1				11
3.	**Additional Needs in this Category (Please list).**																	
	a.	recruiting of knowledgeable staff														3		3
	b.	building constituency														2		2
	c.																	0
	d.																	
Sub-total for Organizational Needs			0	0	30	10	8	0	0	7	15	15	5	10	10	5	20	135

II.		Data Needs (Development of and/or Access to the Best Available Science and Information)	Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1.		**Environmental Monitoring and Research**																
	a.	Support for monitoring environmental parameters. Which parameters? _____						10		3		5		5				23
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**				15						5	5			7		32
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**				10				2		5	10					27
	d.	Increased research on _____.								10	10		20				2	42
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.								2		5	20			5		32
2.		**Socio-Economic Monitoring and Research**																
	a.	Research on the economics of coastal conservation and restoration																0
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)																0
3.		**Environmental, Economic and GIS Data**																
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.									5							5
	b.	Additional spatial data on (please list needs) _____.								2								2
	c.	Guidance on data and attribute standards.								1								1
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.								2	5			3		3		13
	e.	Information on model conservation projects that integrate marine and coastal conservation.									5			2		2		9
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work									5							5
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.					2			2							2	6
	h.	Assistance with developing GIS data layers for specific projects.				5	10			5		5		5		2		32
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.					15									3		18
																		0
4.		**Additional Needs (Please list).**																
	a.																	
	b.																	
	c.																	
	d.																	247
		Sub-total for data needs	0	0	0	30	27	10	0	29	30	25	55	15	0	22	4	247

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1.		**Collaboration/Communications**																
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.					2								5		5	12
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.								5	5			5	5		5	25
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.								2				5	5			12
	d.	A "one-stop shop" to identify government programs and assistance.				5	2			2							5	14
	e.	Improved marketing of existing incentive programs.									5							5
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).					5					5			20	5	10	45
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.									5			5	5	4		19
2.		**Policy Needs/Incentives**																
	a.	Improved incentives for landowners to conduct conservation activities on their land.					15				5	5				3		28
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).					10					5				3	2	20
	c.	Development of incentives for marine resources user groups to include conservation measures.														3		3
	d.	Effective marine policies that include conservation.																0
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.																0
	f.	Programmatic permits for specific types of conservation projects or geographic regions.										5					2	7
3.		**Additional Needs (Please list).**																
	a.																	
	b.																	
	c.																	
	d.																	190
Sub-total for this sheet			0	0	0	5	34	0	0	9	20	20	0	15	40	18	29	190

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
1.		**General Public Outreach and Education**		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	a.	Improved public access to significant areas/projects (map production, access, etc).						10								5		15
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)										5		15		5	5	30
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.											3					3
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.									5					5		10
	e.	Support/assist with K-12 education programs.					2			5	10		2	5				24
	f.	Improved community buy-in for coastal conservation.					2	20		5	5				10	5		47
2.		**Connecting People to Place**																
	a.	Assistance with outreach products to connect community to place (land and ocean).						20		5			5	5	5	5		45
	b.	Increased stewardship ethic in our community.					4	20		5	5	5			10	5	5	59
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.				15		20		5	5				5	5		55
3.		**Additional Needs (Please list).**																
	a.	support/assist with community college education programs - tuition incentive for												5				5
	b.	Public outreach and membership building													10			10
	c.																	
	d.																	
		Sub-total for this sheet	0	0	0	15	8	90	0	25	30	10	10	30	40	35	10	303

V. Training and Technology Needs			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
1.		**Conferences/Workshops/Peer Learning**																
	a.	Funds for attending professional conferences.			20					2			5		5		2	34
	b.	Access to focused education opportunities (continuing education, Extension courses, workshops).								2				5			5	12
	c.	Opportunities for peer learning with other organizations who do similar work.								2		2		5		5	5	19
	d.	Increased venues for sharing data and information (workshops, forums and conferences).									5	2	5					12
2.		**Equipment**																
	a.	Field equipment (i.e. tools)				10	4			2		2	5	3			20	46
	b.	Vehicles (i.e. trucks and boats)										2						2
3.		**Technology**																
	a.	GIS Software.				5	7			2		2						16
	b.	Other software needs? (please provide list). _____.										1		1				2
	c.	New computer hardware.				5				1		2	5		5			18
4.		**Additional Needs (Please list).**																
	a.	Grant Writing								3								3
	b.	Access to available funding								3								3
	c.																	
	d.																	0
5.		**Training and Access to Technical Expertise**																
	a.	Engineering.										1						1
	b.	Hydrology.										1						1
	c.	Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).										1		4				5
	d.	Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**				5				2		1				5		13
	f.	Environmental Law.								2		1						3
	h.	Process skills - **facilitation, negotiation, project evaluation (please circle bold).**												1				1
	i.	Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.				5				4				1				10
	j.	**Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**								2				5				7
	k.	GPS.				5				1		1						7
	l.	Web design, graphic design.								1		1						2
	m.	Permitting projects.								1		0						1
	n.	Other: _____															5	5
		Sub-total for this sheet	0	0	20	35	11	0	0	30	5	20	20	25	10	10	37	223

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)		Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	
a.	Improved understanding of marine laws and regulations that affect marine conservation.																0
b.	Enforcement of existing regulations (i.e. Clean Water Act)				5							2					7
b.	Safe Harbor programs for private lands that is adopted by federal and state agencies.										5						5
c.	Assistance with determining what permits are necessary for project implementation.					2						3	1		5		11
d.	Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).					6					5		2				13
e.	Permit Assistance Center to aid landowners doing voluntary conservation projects.					2						3	2				7
f.	Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).					2						2					4
3.	**Additional Needs (Please list).**																
	a. Obtaining cultural survey of area														5		5
	b.																
	c.																
	d.																
Sub-total for this shee			0	0	5	12	0	0	0	0	10	10	5	0	10	0	52

OTHER		Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
a.	Land management		100														100
b.	Maintenance of existing facility			50													50
b.																	0
c.																	0
d.																	0
e.																	0
f.																	0
Sub-total			100	0	0	0	0	0	0	0	0	0	0	0	0	0	150

I.		Organizational Needs (Building and Maintaining Your Organization)	Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1.		**Business Planning**																
	a.	Assistance in the creation of a business plan.							10									10
	b.	Assistance in the creation of a strategic plan.																0
	c.	Assistance with developing or sustaining a marketing program.																0
	d.	Solutions/strategies to cover up-front costs of developing projects.																0
2.		**Business Management and Finances**																
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).																0
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).																0
	c.	Assistance with strategies to retain knowledgeable staff.								3								3
	d.	Enable advance and/or speed up payment process for government funded projects.												5				5
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.										5	3	5				13
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.											2					2
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.									10							10
3.		**Additional Needs in this Category (Please list).**																
	a.	Master plan for coast					10											10
	b.																	0
	c.																	0
	d.																	
Sub-total for Organizational Needs			0	0	0	0	10	0	10	3	10	5	5	10	0	0	0	53

II. Data Needs (Development of and/or Access to the Best Available Science and Information)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
1. Environmental Monitoring and Research				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	a.	Support for monitoring environmental parameters. Which parameters? _____			30					3	5				5			43
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**							5						5			10
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**											10		3			13
	d.	Increased research on _____.							10	10		3	20	5				48
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.								3	5	3	20	10				41
2. Socio-Economic Monitoring and Research																		
	a.	Research on the economics of coastal conservation and restoration					10		10	10								30
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)					15		15									30
3. Environmental, Economic and GIS Data																		
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.								2		3		5				10
	b.	Additional spatial data on (please list needs) _____.																0
	c.	Guidance on data and attribute standards.								2								2
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.										3						3
	e.	Information on model conservation projects that integrate marine and coastal conservation.																0
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work										3						3
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.								1								1
	h.	Assistance with developing GIS data layers for specific projects.								1								1
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.									5							5
																		0
4. Additional Needs (Please list).																		
	a.																	
	b.																	
	c.																	
	d.																	
Sub-total for data needs			0	0	30	0	25	0	40	32	15	15	50	20	13	0	0	240

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
				A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1.		**Collaboration/Communications**																
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.										5						5
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.								3		5			5	75		88
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.									5				5			10
	d.	A "one-stop shop" to identify government programs and assistance.										5						5
	e.	Improved marketing of existing incentive programs.					5			2	10	5						22
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).					5	10			10	5			5			35
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.						10				5						15
2.		**Policy Needs/Incentives**																
	a.	Improved incentives for landowners to conduct conservation activities on their land.					5	25	5	3	5	5		5	5			58
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).			50		5	25	3		5	5		5	2			100
	c.	Development of incentives for marine resources user groups to include conservation measures.						25	1	3	5	5			2			41
	d.	Effective marine policies that include conservation.								2								2
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.							1						3			4
	f.	Programmatic permits for specific types of conservation projects or geographic regions.					10							5				15
3.		**Additional Needs (Please list).**																
	a.																	
	b.																	
	c.																	
	d.																	
		Sub-total for this sheet	0	0	50	0	30	95	10	13	40	45		15	27	75	0	400

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						Totals
1.		**General Public Outreach and Education**		A	B	C	D	E	F	G	H	I	J	K	L	M	N	
	a.	Improved public access to significant areas/projects (map production, access, etc).													5			5
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)										3			10			13
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.			10					2		3	3	5	5			28
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.										3		5	5		20	33
	e.	Support/assist with K-12 education programs.								5	10	3	2	10	10		10	50
	f.	Improved community buy-in for coastal conservation.					10			5	10	3			10			38
2.		**Connecting People to Place**																
	a.	Assistance with outreach products to connect community to place (land and ocean).								5			5				5	15
	b.	Increased stewardship ethic in our community.								5	10	5			10		10	40
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.						5		5					5			15
3.		**Additional Needs (Please list).**																
	a.	support/assist with community college education programs - tuition incentive for students												5				5
	b.																	
	c.																	
	d.																	
		Sub-total for this sheet	0	0	10	0	10	5	0	27	30	20	10	25	60	0	45	242

V. Training and Technology Needs	Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
1. Conferences/Workshops/Peer Learning		A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
a. Funds for attending professional conferences.											5					5
b. Access to focused education opportunities (continuing education, Extension courses, workshops).									5	5						10
c. Opportunities for peer learning with other organizations who do similar work.										5					10	15
d. Increased venues for sharing data and information (workshops, forums and conferences).										5	5				10	20
2. Equipment																
a. Field equipment (i.e. tools)											5					5
b. Vehicles (i.e. trucks and boats)																0
3. Technology																
a. GIS Software.					10									10		20
b. Other software needs? (please provide list). _____.																0
c. New computer hardware.											5					5
4. Additional Needs (Please list).																
a. Grant Writing					5											5
b. Access to available funding					10											10
c. Maintenance of existing facility																0
d.																0
5. Training and Access to Technical Expertise																
a. Engineering.																0
b. Hydrology.																0
c. Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).																0
d. Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**							10					10		10		30
f. Environmental Law.														5		5
h. Process skills - **facilitation, negotiation, project evaluation (please circle bold).**												10				10
i. Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.																0
j. **Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**																0
k. GPS.																0
l. Web design, graphic design.																0
m. Permitting projects.																0
n. Other: _____																
Sub-total for this sheet	0	0	0	0	25	0	10	0	5	15	20	20	0	25	20	140

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)		Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
a.	Improved understanding of marine laws and regulations that affect marine conservation.								5								5
b.	Enforcement of existing regulations (i.e. Clean Water Act)								5			2	5			15	27
b.	Safe Harbor programs for private lands that is adopted by federal and state agencies.																0
c.	Assistance with determining what permits are necessary for project implementation.			10					5			3					18
d.	Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).							10				5					15
e.	Permit Assistance Center to aid landowners doing voluntary conservation projects.							10	5			3	5				23
f.	Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).							10	5			2					17
3.	**Additional Needs (Please list).**																
	a. Obtaining cultural survey of area																0
	b.																
	c.																
	d.																
Sub-total for this sheet			0	10	0	0	0	30	25	0	0	15	10	0	0	15	105

OTHER		Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
a.	Land management		100														100
b.	Facilities															20	20
b.																	0
c.																	0
d.																	0
e.																	0
f.																	0
Sub-total for this sheet		0	100	0	0	0	0	0	0	0	0	0	0	0	0	20	120

I. Organizational Needs (Building and Maintaining Your Organization)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1. Business Planning																											
	a.	Assistance in the creation of a business plan.			10											20							30				60
	b.	Assistance in the creation of a strategic plan.	7															1							10	10	28
	c.	Assistance with developing or sustaining a marketing program.													15	3		1			15			1			35
	d.	Solutions/strategies to cover up-front costs of developing projects.					20				5		20			2				40	5		40	2		10	144
2. Business Management and Finances																											
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).																		10		10		2			22
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).																1									
	c.	Assistance with strategies to retain knowledgeable staff.																									
	d.	Enable advance and/or speed up payment process for government funded projects.														5								3			8
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.			5				20	25	10	5				15		1				10				20	111
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.										2						2									4
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.			3			10			5	2			10			2								10	42
3. Additional Needs in this Category (Please list).																											
	a.	Funding that allows for increseaed office support staff (SS)															5										5
	b.	Unrestricted funds for development																						5			5
	c.	Unrestricted funds for equipment																						5			5
	d.																										
Sub-total for Organizational Needs			7		18		20	10	20	25	20	9	20	0	25	45	5	8		50	20	20	70	18	10	50	469

II. Data Needs (Development of and/or Access to the Best Available Science and Information)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1.		**Environmental Monitoring and Research**																									
	a.	Support for monitoring environmental parameters. Which parameters? _____		40		30		5						5			10	10			5			1	20		126
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**	4			10												1				10		3			28
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**						5										10						1			16
	d.	Increased research on _____.		20	7												30	5									62
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.			7	5												5	25								42
2.		**Socio-Economic Monitoring and Research**																									
	a.	Research on the economics of coastal conservation and restoration										1			5												6
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)													5							10					15
3.		**Environmental, Economic and GIS Data**																									
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.							20		10	2		11				5	30					1	10		89
	b.	Additional spatial data on (please list needs) _____.	4	10			20	10		5							30					10					89
	c.	Guidance on data and attribute standards.	4															1									5
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.		10	2	5								2				5						1			25
	e.	Information on model conservation projects that integrate marine and coastal conservation.			3														5					1			9
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work						20																			20
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.			3																						3
	h.	Assistance with developing GIS data layers for specific projects.	4					10					20	2										2			38
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.																1									
												2															2
4.		**Additional Needs (Please list).**																									
	a.	Economic Trends Studies (consumption of coastal resources)													10												10
	b.																										
	c.																										
	d.																										
		Sub-total for data needs	16	80	22	50	20	50	20	5	10	5	20	20	20		70	43	60		5	30		10	30	0	585

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1.		**Collaboration/Communications**																									
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.			7		3								5				20		15						50
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.	1	2	12		3										5		20							2	45
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.																								2	2
	d.	A "one-stop shop" to identify government programs and assistance.			10							5								20							35
	e.	Improved marketing of existing incentive programs.					8					1			5												14
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).								25		1			10											2	38
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.			10						10	5		5	5								10			2	47
2.		**Policy Needs/Incentives**																									
	a.	Improved incentives for landowners to conduct conservation activities on their land.					3				10	5								15						3	36
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).		5								1		5								5					16
	c.	Development of incentives for marine resources user groups to include conservation measures.												5								5				5	15
	d.	Effective marine policies that include conservation.																								2	2
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.												5				2				10				2	19
	f.	Programmatic permits for specific types of conservation projects or geographic regions.	2				8				10													2			22
3.		**Additional Needs (Please list).**																									
	a.																										
	b.																										
	c.																										
	d.																										
Sub-total for this sheet			3	7	39		25			25	30	18	0	20	25		5	2	40	35	15	20	10	2		20	341

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
1.	**General Public Outreach and Education**		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
	a.	Improved public access to significant areas/projects (map production, access, etc).			2					7		5						2								1	17
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)		5	2		3	5				5		5				5		5						1	36
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.							10	8					5		10	2								1	36
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.										2		5	5			0								1	13
	e.	Support/assist with K-12 education programs.	7									2		5				5								1	20
	f.	Improved community buy-in for coastal conservation.										5						0								2	7
2.	**Connecting People to Place**																										
	a.	Assistance with outreach products to connect community to place (land and ocean).	7		2			5						5			10	5			5	10				1	50
	b.	Increased stewardship ethic in our community.	6		5		2					5		5												1	24
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.											20	5	10						10					1	46
3.	**Additional Needs (Please list).**																										
	a.	A modern description of our planet for children (i.e. video games that play earth dynamics) (CCC)									10																10
	b.	Assistance w/ public access plan for Jacoby Creek watershed w/ City of Arcata and Jacoby Creek Land Trust lands																			10						10
	c.																										
	d.																										
Sub-total for this sheet			20	5	11		5	10	10	15	10	24	20	30	20		20	19		5	25	10				10	269

V. Training and Technology Needs	Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Totals
1. Conferences/Workshops/Peer Learning																									
a. Funds for attending professional conferences.										5		2	5	5					2			2			21
b. Access to focused education opportunities (continuing education, Extension courses, workshops).	3				5	10				5		2		5				5				2			37
c. Opportunities for peer learning with other organizations who do similar work.	3								10	5		3		5				5	2						33
d. Increased venues for sharing data and information (workshops, forums and conferences).									10	5		3				2				5		2			27
2. Equipment																									
a. Field equipment (i.e. tools)		3				5								15					5			20	20		68
b. Vehicles (i.e. trucks and boats)		5				5								25		10						20			65
3. Technology																									
a. GIS Software.	4															10				5			10		29
b. Other software needs? (please provide list). _____.																			2						2
c. New computer hardware.	4																		4			4			12
4. Additional Needs (Please list).																									
a. Best Management Practices catalogues (CCC)									10																10
b.																									
c.																									
d.																									
5. Training and Access to Technical Expertise																									
a. Engineering.					15																				15
b. Hydrology.																							10		10
c. Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).																									
d. Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**	4					5										2			5						16
f. Environmental Law.																									
h. Process skills - **facilitation, negotiation, project evaluation (please circle bold).**										2															2
i. Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.	4										20					3				10					37
j. **Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**										2						1									3
k. GPS.																									
l. Web design, graphic design.	4												5												9
m. Permitting projects.	4																								4
n. Other: _Board Ed./Conservation Easements__																			5						5
Sub-total for this sheet	30	8			20	25			30	24	20	10	10	55		28		10	25	20		50	40		405

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)	Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
a. Improved understanding of marine laws and regulations that affect marine conservation.						5		5				5										5		5	25
b. Enforcement of existing regulations (i.e. Clean Water Act)																							20		20
b. Safe Harbor programs for private lands that is adopted by federal and state agencies.																									0
c. Assistance with determining what permits are necessary for project implementation.											20	5										5			30
d. Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).																						5		5	10
e. Permit Assistance Center to aid landowners doing voluntary conservation projects.					10					10		5													25
f. Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).										10		5													15
3. Additional Needs (Please list).																									
a. Regional permitting - estuary restoration																						5			5
b.																									
c.																									
d.																									
Sub-total for this shee					10	5		5		20	20	20				0			0	0		20	20	10	130

OTHER		Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Totals
a.	Land management/operation and maintenance			10	50			75																		135
b.	Resources to deal with invasives	20																								20
b.	Acquisition																									
c.																										0
d.																										0
e.																										0
f.																										0
Sub-total fo		**20**	**0**	**10**	**50**	**0**	**0**	**75**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**		155

I. Organizational Needs (Building and Maintaining Your Organization)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
1.	**Business Planning**		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
	a.	Assistance in the creation of a business plan.			7																						7
	b.	Assistance in the creation of a strategic plan.	2																								2
	c.	Assistance with developing or sustaining a marketing program.																									0
	d.	Solutions/strategies to cover up-front costs of developing projects.								5					10												15
2.	**Business Management and Finances**																										0
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).								5																	5
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).																1									1
	c.	Assistance with strategies to retain knowledgeable staff.																									0
	d.	Enable advance and/or speed up payment process for government funded projects.													5												5
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.			5			5	10	5		5	25					1				10		9			75
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.			5						10	2						2									19
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.	1		3	10		5			10	2						2	10	25			25	1	20		114
3.	**Additional Needs in this Category (Please list).**																										0
	a.	Regional Organizations																								10	10
	b.																										0
	c.																										0
	d.																										0
Sub-total for Organizational Needs			3	0	20	10	0	10	10	15	20	9	25	0	15	0	0	6	10	25	0	10	25	10	20	10	253

II. Data Needs (Development of and/or Access to the Best Available Science and Information)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
1.		**Environmental Monitoring and Research**																									
	a.	Support for monitoring environmental parameters. Which parameters? _____		35		30											20	5							20		110
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**				10									5		10	2				10					37
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**																						3			3
	d.	Increased research on _____.	3	20								1					30	2				10					66
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.			3	10		10										2	10					1			36
2.		**Socio-Economic Monitoring and Research**																									0
	a.	Research on the economics of coastal conservation and restoration	3							5		1			5	10		2								25	51
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)										1			5	10		5				10		1			32
3.		**Environmental, Economic and GIS Data**																									0
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.	1					5	30	5		2				10	15	10	10	10			25				123
	b.	Additional spatial data on (please list needs) _____.		10				5		5												10		1			31
	c.	Guidance on data and attribute standards.																1									1
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.	1		2					5																	8
	e.	Information on model conservation projects that integrate marine and coastal conservation.	1		3							1			5			5	5								20
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work						10				1						5	5					1			22
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.			3																						3
	h.	Assistance with developing GIS data layers for specific projects.	1																								1
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.	10									2						5		10				3			30
4.		**Additional Needs (Please list).**																									0
	a.	Economy - economic trends, consumption resource use and conservation base on economic facts													15												15
	b.																										0
	c.																										0
	d.																										0
		Sub-total for data needs	20	65	11	50	0	30	30	20	0	9	0	0	35	30	75	44	30	20	0	40	25	10	20	25	589

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
1.		**Collaboration/Communications**	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.	2	5	7					5	10				5			2	20					1			57
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.	2	5	12	5			10			2			5			2	20								63
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.									20	2															22
	d.	A "one-stop shop" to identify government programs and assistance.	2		10					5		2						2						1			22
	e.	Improved marketing of existing incentive programs.										2				10								1			13
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).								5	20	1	25		10	10		2		10	20						103
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.	6		15			5	10	5					5				5	15			30				96
2.		**Policy Needs/Incentives**																									0
	a.	Improved incentives for landowners to conduct conservation activities on their land.	2	5					5			5				20					15		10	6			68
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).		5				5	5							5		2	5			5				13	45
	c.	Development of incentives for marine resources user groups to include conservation measures.	2					5	5							5				10		10	10			12	59
	d.	Effective marine policies that include conservation.	2			5		10										2							10		29
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.	2					5									10	2				10		1			30
	f.	Programmatic permits for specific types of conservation projects or geographic regions.	10					5	10				25			20				10				10			90
3.		**Additional Needs (Please list).**																									0
	a.																										0
	b.																										0
	c.																										0
	d.																										0
Sub-total for this sheet			30	20	44	10	0	35	45	20	50	14	50	0	25	70	10	14	50	45	35	25	50	20	10	25	697

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
1.		**General Public Outreach and Education**	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
	a.	Improved public access to significant areas/projects (map production, access, etc).			4					2.5		5			10			2						2			25.5
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)		5	7	10		10	5			5						2									44
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.	3		5				5	2.5					5												20.5
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.							5			4			10			2				10		3			34
	e.	Support/assist with K-12 education programs.	3									4						2									9
	f.	Improved community buy-in for coastal conservation.	3		2							3	25			5								2		25	65
2.		**Connecting People to Place**																									0
	a.	Assistance with outreach products to connect community to place (land and ocean).	3		2											10						5		1			21
	b.	Increased stewardship ethic in our community.	2		5			10				5												2			24
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.	1														20	2			20						43
3.		**Additional Needs (Please list).**																									0
	a.																										0
	b.																										0
	c.																										0
	d.																										0
		Sub-total for this sheet	15	5	25	10	0	20	15	5	0	26	25	0	25	15	20	10	0	0	20	15	0	10		25	286

V. Training and Technology Needs	Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Totals
1. Conferences/Workshops/Peer Learning																									
a. Funds for attending professional conferences.																									0
b. Access to focused education opportunities (continuing education, Extension courses, workshops).	3																								3
c. Opportunities for peer learning with other organizations who do similar work.	4			10						5															19
d. Increased venues for sharing data and information (workshops, forums and conferences).		10								5						4	10			10			20		59
2. Equipment																									0
a. Field equipment (i.e. tools)																									0
b. Vehicles (i.e. trucks and boats)																10									10
3. Technology																									0
a. GIS Software.																									0
b. Other software needs? (please provide list). _____.																									0
c. New computer hardware.																									0
4. Additional Needs (Please list).																									0
a. Best Management Practices catalogues (CCC)																									0
b.																									0
c.																									0
d.																									0
																									0
5. Training and Access to Technical Expertise																									0
																									0
a. Engineering.																									0
b. Hydrology.																									0
c. Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).								15		2															17
d. Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**	3									2						2									7
f. Environmental Law.																									0
h. Process skills - **facilitation, negotiation, project evaluation (please circle bold).**										2						2									4
i. Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.																4									4
j. **Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**																									0
k. GPS.																									0
l. Web design, graphic design.										1															1
m. Permitting projects.																									0
n. Other: _Board Ed./Conservation Easements__																									0
Sub-total for this sheet	10	10	0	10	0	0	0	15	0	17	0	0	0	0	0	22	10	0	0	10	0	0	20	0	124

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)	Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
a. Improved understanding of marine laws and regulations that affect marine conservation.						5																	20		25
b. Enforcement of existing regulations (i.e. Clean Water Act)																			20						20
b. Safe Harbor programs for private lands that is adopted by federal and state agencies.	1								15																16
c. Assistance with determining what permits are necessary for project implementation.	5									5						2						5	10	15	42
d. Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).	1																		5						6
e. Permit Assistance Center to aid landowners doing voluntary conservation projects.								5		10						2						5			22
f. Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).									15	10															25
3. Additional Needs (Please list).																									0
a. Increased flexibility within coastal regulatory/permitting processes to accommodate innovative design in mixed conservation/development projects																		10							10
b. Regional Permitting - Estuary Restoration																						40			40
c. Enforcement of existing regulations																									
d.																									0
Sub-total for this shee	7	0	0	0	0	5	0	5	30	25	0	0	0	0	0	4	0	10	25	0	0	50	30	15	206

OTHER		Federal Gov.	State Gov.	Local Gov.	Tribal	Private Bus.				Education	Nonprofit Organizations						
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	Totals
a.	Land management		100														100
b.	Facilities															20	20
b.																	0
c.																	0
d.																	0
e.																	0
f.																	0
Sub-total for this sheet		0	100	0	0	0	0	0	0	0	0	0	0	0	0	20	120

I.		Organizational Needs (Building and Maintaining Your Organization)	Fed. Gov.	State Gov.	Local Gov.	Priv. Bus.	Ed.	Nonprofit Organizations						Totals
				A	B			C	D	E	F	G	H	
1.		**Business Planning**												
	a.	Assistance in the creation of a business plan.								5	5		2	12
	b.	Assistance in the creation of a strategic plan.								5	5		5	15
	c.	Assistance with developing or sustaining a marketing program.								5	5			10
	d.	Solutions/strategies to cover up-front costs of developing projects.		2						5	5	5		17
2.		**Business Management and Finances**												
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).									5			5
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).		1						1	5			7
	c.	Assistance with strategies to retain knowledgeable staff.		2						1	5			8
	d.	Enable advance and/or speed up payment process for government funded projects.										3	3	6
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.		10					5					15
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.								2		1	2	5
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.						1	5	2		3		11
3.		**Additional Needs in this Category (Please list).**												
	a.	General fund increases for professional science staff		13										13
	b.	Project management staff		3										3
	c.	We hope to establish an office									5			5
	d.													0
Sub-total for Organizational Needs			0	31	0	0	0	1	10	26	40	12	12	132

II.		Data Needs (Development of and/or Access to the Best Available Science and Information)	Fed. C	State Gov. A	Local Gov. B	Priv. Bus.	Ed.	Nonprofit Organizations C	D	E	F	G	H	Totals
1.		**Environmental Monitoring and Research**												
	a.	Support for monitoring environmental parameters. Which parameters? _____		5						3		3	5	16
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**		2				2	3	3		3	3	16
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**		1						2			3	6
	d.	Increased research on _____.		2						4		2		8
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.								4		3	2	9
2.		**Socio-Economic Monitoring and Research**												
	a.	Research on the economics of coastal conservation and restoration								1				1
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)								1				1
3.		**Environmental, Economic and GIS Data**												
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.		3						1		1		5
	b.	Additional spatial data on (please list needs) _____.						2	2			2		6
	c.	Guidance on data and attribute standards.		2								3		5
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.											1	1
	e.	Information on model conservation projects that integrate marine and coastal conservation.								1			1	2
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work								1		3	1	5
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.		2						2	5			9
	h.	Assistance with developing GIS data layers for specific projects.										2		2
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.								2		2		4 0
4.		**Additional Needs (Please list).**												
	a.													
	b.													
	c.													
	d.													
		Sub-total for data needs	0	17	0	0	0	4	5	25	5	24	16	96

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal	State Gov. A	Local Gov. B	Private	Education	Nonprofit Organizations C	D	E	F	G	H	Totals
1.		**Collaboration/Communications**												
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.		2							2.5	4	7	15.5
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.								2	2.5	3	2	9.5
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.											1	1
	d.	A "one-stop shop" to identify government programs and assistance.								2		2	1	5
	e.	Improved marketing of existing incentive programs.												0
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).						1				2	2	5
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.											2	2
2.		**Policy Needs/Incentives**												
	a.	Improved incentives for landowners to conduct conservation activities on their land.							5	1			5	11
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).								1			5	6
	c.	Development of incentives for marine resources user groups to include conservation measures.											5	5
	d.	Effective marine policies that include conservation.								2				2
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.												0
	f.	Programmatic permits for specific types of conservation projects or geographic regions.										3	4	7
3.		**Additional Needs (Please list).**												
	a.													
	b.													
	c.													
	d.													
		Sub-total for this sheet	0	2	0	0	0	1	5	8	5	14	34	69

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							Totals
1.	**General Public Outreach and Education**		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	
	a.	Improved public access to significant areas/projects (map production, access, etc).			2					7		5						2								1	17
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)		5	2		3	5				5		5				5		5						1	36
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.							10	8					5		10	2								1	36
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.										2		5	5			0								1	13
	e.	Support/assist with K-12 education programs.	7									2		5				5								1	20
	f.	Improved community buy-in for coastal conservation.										5						0								2	7
2.	**Connecting People to Place**																										
	a.	Assistance with outreach products to connect community to place (land and ocean).	7		2			5						5			10	5			5	10				1	50
	b.	Increased stewardship ethic in our community.	6		5		2					5		5												1	24
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.											20	5	10						10					1	46
3.	**Additional Needs (Please list).**																										
	a.	A modern description of our planet for children (i.e. video games that play earth dynamics) (CCC)									10																10
	b.	Assistance w/ public access plan for Jacoby Creek watershed w/ City of Arcata and Jacoby Creek Land Trust lands																			10						10
	c.																										
	d.																										
Sub-total for this sheet			20	5	11		5	10	10	15	10	24	20	30	20		20	19		5	25	10				10	269

V. Training and Technology Needs	Federal Gov.					State Gov.				Local Gov.	Tribal		Private Bus.		Education			Nonprofit Organizations							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Totals
1. Conferences/Workshops/Peer Learning																									
a. Funds for attending professional conferences.										5		2	5	5					2			2			21
b. Access to focused education opportunities (continuing education, Extension courses, workshops).	3				5	10				5		2		5				5				2			37
c. Opportunities for peer learning with other organizations who do similar work.	3								10	5		3		5				5	2						33
d. Increased venues for sharing data and information (workshops, forums and conferences).									10	5		3				2				5		2			27
2. Equipment																									
a. Field equipment (i.e. tools)		3				5								15					5			20	20		68
b. Vehicles (i.e. trucks and boats)		5				5								25		10						20			65
3. Technology																									
a. GIS Software.	4															10				5			10		29
b. Other software needs? (please provide list). _____.																			2						2
c. New computer hardware.	4																		4			4			12
4. Additional Needs (Please list).																									
a. Best Management Practices catalogues (CCC)									10																10
b.																									
c.																									
d.																									
5. Training and Access to Technical Expertise																									
a. Engineering.					15																				15
b. Hydrology.																							10		10
c. Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).																									
d. Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**	4					5										2			5						16
f. Environmental Law.																									
h. Process skills - **facilitation, negotiation, project evaluation (please circle bold).**										2															2
i. Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.	4										20					3				10					37
j. **Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**										2						1									3
k. GPS.																									
l. Web design, graphic design.	4												5												9
m. Permitting projects.	4																								4
n. Other: _Board Ed./Conservation Easements__																			5						5
Sub-total for this sheet	30	8			20	25			30	24	20	10	10	55		28		10	25	20		50	40		405

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)		Federal Gov.	State Gov. A	Local Gov. B	Private Bus.	Education	Nonprofit Organizations C	D	E	F	G	H	Totals
a.	Improved understanding of marine laws and regulations that affect marine conservation.											1	1
b.	Enforcement of existing regulations (i.e. Clean Water Act)											1	1
b.	Safe Harbor programs for private lands that is adopted by federal and state agencies.											1	1
c.	Assistance with determining what permits are necessary for project implementation.								1	2.5		1	4.5
d.	Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).									2.5		1	3.5
e.	Permit Assistance Center to aid landowners doing voluntary conservation projects.								1			1	2
f.	Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).											1	1
3.	**Additional Needs (Please list).**												
a.	Regulatory agency staff to enforce regulations and assist with permits		5										5
b.													
c.													
d.													
Sub-total for this shee			5	0	0	0	0	0	2	5	0	7	19

OTHER		Federal Gov.	State Gov.	Local Gov.	Private Bus.	Education	Nonprofit Organizations						
			A	B			C	D	E	F	G	H	Totals
a.	Land management/Operation and maintenance		8				10						18
b.	Acquisition						80	80			12		172
b.	Money												0
c.													0
d.													0
e.													0
f.													0
Sub-total			8	0	0	0	90	80	0	0	12	0	190

I.	Organizational Needs (Building and Maintaining Your Organization)		Fed. Gov.	State Gov.	Local Gov.	Priv. Bus.	Ed.	Nonprofit Organizations						Totals
				A	B			C	D	E	F	G	H	
1.	**Business Planning**													
	a.	Assistance in the creation of a business plan.											2	2
	b.	Assistance in the creation of a strategic plan.										2	3	5
	c.	Assistance with developing or sustaining a marketing program.												0
	d.	Solutions/strategies to cover up-front costs of developing projects.		2				5				5	2	14
2.	**Business Management and Finances**													
	a.	Strategies to cover or reduce indirect operating expenses (Our Indirect expense is approx. _____%).												0
	b.	Assistance with day to day financial management (e.g., book keeping, budgeting, cash flow, invoicing, record keeping).												0
	c.	Assistance with strategies to retain knowledgeable staff.												0
	d.	Enable advance and/or speed up payment process for government funded projects.										5	2	7
	e.	State general funding (not tied to bond acts, etc.) for coastal conservation.		10				5				5		20
	f.	Assistance with understanding agency goals and how they link with existing funding opportunities.						5					2	7
	g.	Support developing implementation strategies for regional marine and coastal conservation plans.		2				5					2	9
3.	**Additional Needs in this Category (Please list).**													
	a.	General fund increases for professional science staff		22										22
	b.	Transmittal of funding opportunities in restoration, consultations, forestry											5	5
	c.													0
	d.													
	Sub-total for Organizational Needs		0	36	0	0	0	20	0	0	0	17	18	91

II. Data Needs (Development of and/or Access to the Best Available Science and Information)			Fed. Gov.	State Gov.	Local Gov.	Priv. Bus.	Ed.	Nonprofit Organizations						Totals
				A	B			C	D	E	F	G	H	
1.		**Environmental Monitoring and Research**												
	a.	Support for monitoring environmental parameters. Which parameters? _____		3				5		7		3	2	20
	b.	Assistance with designing **monitoring or research** protocols and programs **(please circle bold)**						5		7			2	14
	c.	Necessary supplies or equipment for **existing/new** monitoring or research **(please circle bold).**								5			2	7
	d.	Increased research on _____.		4						30		2	3	39
	e.	Coordination of monitoring and research within a specific geographic area- Where?_____.		2									1	3
2.		**Socio-Economic Monitoring and Research**												
	a.	Research on the economics of coastal conservation and restoration		1				5					1	7
	b.	Research on economic valuation of traditional uses (e.g., fishing, forestry, ag.)											1	1
3.		**Environmental, Economic and GIS Data**												
	a.	Creation of centralized information on existing data to support coastal and marine conservation planning and implementation.										5	3	8
	b.	Additional spatial data on (please list needs) _____.						5				2		7
	c.	Guidance on data and attribute standards.												0
	d.	Information on marine Areas of Special Biological Significance (ASBS) in Mendocino, Humboldt, and Del Norte counties.											1	1
	e.	Information on model conservation projects that integrate marine and coastal conservation.		2									1	3
	f.	Method for identifying ecologically or recreationally significant land and sea interfaces to focus conservation work						5					1	6
	g.	Create or get better access to technical advisors such as UC Coop Extension, NRCS staff etc.		2									1	3
	h.	Assistance with developing GIS data layers for specific projects.											1	1
	i.	An entity that can develop up-to-date, accurate data layers for a diversity of groups.		3				5		17		5	1	31
4.		**Additional Needs (Please list).**												
	a.													
	b.													
	c.													
	d.													
		Sub-total for data needs	0	17	0	0	0	30	0	66	0	17	21	151

III. Social-Political Needs (Enhancing Collaboration, Incentives, and Policies)			Federal Gov.	State Gov. A	Local Gov. B	Private Bus.	Education	Nonprofit Organizations C	D	E	F	G	H	Totals
1.		**Collaboration/Communications**												
	a.	Improved **communication** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____.								5		5	1	11
	b.	Improved **collaboration** with conservation partners (i.e., state/fed agencies, tribes, nonprofits, etc). My org. needs this with _____ _____.						5		2			1	8
	c.	Assistance with understanding agency goals and how they link with existing conservation opportunities.											1	1
	d.	A "one-stop shop" to identify government programs and assistance.											1	1
	e.	Improved marketing of existing incentive programs.											1	1
	f.	Development of a regional funding mechanism (such as Open Space District, North Coast Conservancy).						5		5		5	1	16
	g.	Assistance forming regional advocacy within competitive state and federal funding framework.										5	1	6
2.		**Policy Needs/Incentives**												
	a.	Improved incentives for landowners to conduct conservation activities on their land.		5									3	8
	b.	Improved incentives for resources users (fisherman, recreation, land owners, etc.).											3	3
	c.	Development of incentives for marine resources user groups to include conservation measures.										2	3	5
	d.	Effective marine policies that include conservation.		5				5				3	2	15
	e.	Improved tracking and implementation of marine/coastal policy (**local/state/federal**) **(please circle bold)**.						5				3	1	9
	f.	Programmatic permits for specific types of conservation projects or geographic regions.										5	3	8
3.		**Additional Needs (Please list).**												
	a.													
	b.													
	c.													
	d.													
		Sub-total for this sheet	0	10	0	0	0	20	0	12	0	28	22	92

IV. Outreach and Education Needs (Developing Community Stewardship)			Federal Gov.	State Gov.	Local Gov.	Private Bus.	Education	Nonprofit Organizations						Totals
1.		**General Public Outreach and Education**		A	B			C	D	E	F	G	H	
	a.	Improved public access to significant areas/projects (map production, access, etc).												0
	b.	Assistance/support with public education programs (multi-media public outreach such as signage, brochures, radio advertisements)						5						5
	c.	Effective outreach tool for state decision makers regarding the statewide importance of coastal conservation in this region.		5									1	6
	d.	Social Marketing campaign for population centers re: importance of the north coast - why they should care.		3						20			1	24
	e.	Support/assist with K-12 education programs.		3										3
	f.	Improved community buy-in for coastal conservation.		3										3
2.		**Connecting People to Place**												
	a.	Assistance with outreach products to connect community to place (land and ocean).											5	5
	b.	Increased stewardship ethic in our community.		3						2		5	5	15
	c.	Assistance with outreach products to increase awareness of the spiritual and historic context of the land and ocean.		3									4	7
3.		**Additional Needs (Please list).**												
	a.													
	b.													
	c.													
	d.													
		Sub-total for this sheet	0	20	0	0	0	5	0	22	0	5	16	68

V. Training and Technology Needs			Fed. Gov.	State Gov.	Local Gov.	Private Bus.	Education	Nonprofit Organizations						
1. Conferences/Workshops/Peer Learning				A	B			C	D	E	F	G	H	Totals
	a.	Funds for attending professional conferences.											2	2
	b.	Access to focused education opportunities (continuing education, Extension courses, workshops).										5		5
	c.	Opportunities for peer learning with other organizations who do similar work.						5						5
	d.	Increased venues for sharing data and information (workshops, forums and conferences).										5	2	7
2. Equipment														
	a.	Field equipment (i.e. tools)											1	1
	b.	Vehicles (i.e. trucks and boats)											1	1
3. Technology														
	a.	GIS Software.												0
	b.	Other software needs? (please provide list). _____.												0
	c.	New computer hardware.												0
4. Additional Needs (Please list).														
	a.													
	b.													
	c.													
	d.													
5. Training and Access to Technical Expertise														
	a.	Engineering.											1	1
	b.	Hydrology.											1	1
	c.	Real estate issues (e.g., conservation easements, acquisition, negotiations, legal issues).						5					1	6
	d.	Habitat Restoration **design, implementation, and/or monitoring (please circle bold).**						10						10
	f.	Environmental Law.											1	1
	h.	Process skills - **facilitation, negotiation, project evaluation (please circle bold).**											1	1
	i.	Coastal and marine conservation applications in **GIS/remote sensing (Please circle bold)**.											1	1
	j.	**Contracting, MOUs, Cooperative Agreements, Prevailing Wage (please circle bold).**											1	1
	k.	GPS.											1	1
	l.	Web design, graphic design.											1	1
	m.	Permitting projects.											1	1
	n.	Other: _____												
Sub-total for this sheet			0	0	0	0	0	20	0	0	0	10	16	46

VI. Regulatory Needs (Understanding and Improving the Regulatory Environment)		Federal Gov.	State Gov.	Local Gov.	Private Bus.	Education	Nonprofit Organizations						
			A	B			C	D	E	F	G	H	Totals
a.	Improved understanding of marine laws and regulations that affect marine conservation.											1	1
b.	Enforcement of existing regulations (i.e. Clean Water Act)		5				5				5	1	16
b.	Safe Harbor programs for private lands that is adopted by federal and state agencies.											1	1
c.	Assistance with determining what permits are necessary for project implementation.										5	1	6
d.	Safety from liability for restoration/conservation efforts on private land (i.e. County ordinance).										3	1	4
e.	Permit Assistance Center to aid landowners doing voluntary conservation projects.											1	1
f.	Consistency in approach of agency staff working on my projects - (consistent trainings, etc.).										10	1	11
3.	**Additional Needs (Please list).**												
	a. Regulatory agency staff to enforce regulations and assist with permits		5										5
	b.												
	c.												
	d.												
Sub-total for this sheet			10	0	0	0	5	0	0	0	23	7	45

OTHER		Federal Gov.	State Gov.	Local Gov.	Private Bus.	Education	Nonprofit Organizations						
			A	B			C	D	E	F	G	H	Totals
a.	Land management/Operation and maintenance		7					50					57
b.	Acquisition							50					50
b.	Money												0
c.													0
d.													0
e.													0
f.													0
Sub-total			7	0	0	0	0	100	0	0	0	0	107